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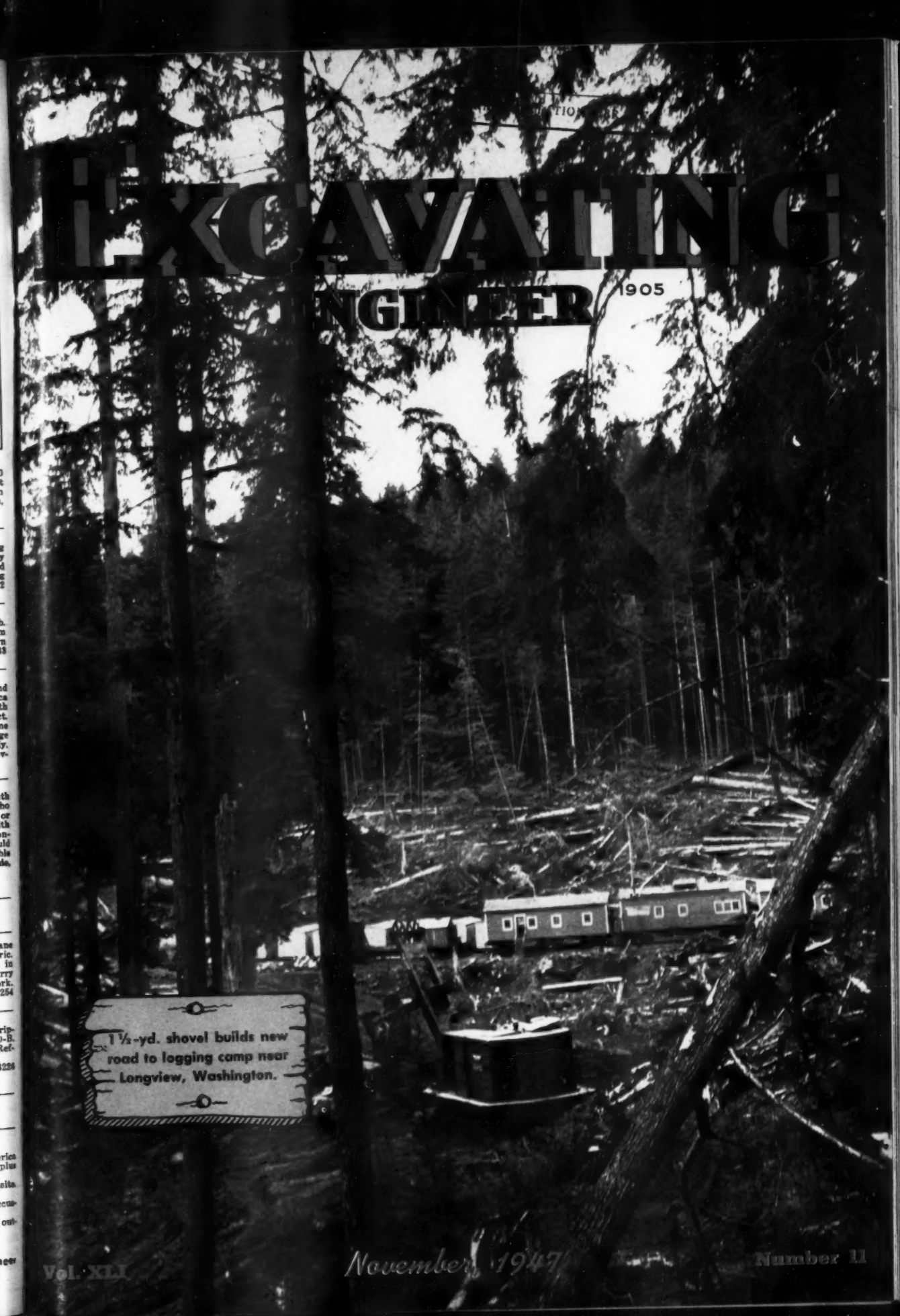

1½-yd. shovel builds new road to logging camp near Longview, Washington.

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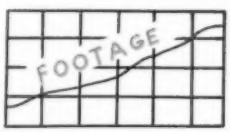
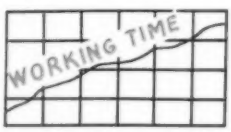
Here's How

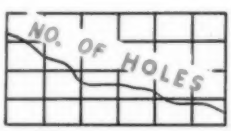
Bucyrus-Erie Blast Hole Drills Can Save You *Money!*



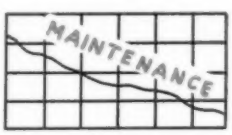
There is a marked increase in footage because accurately-timed shock-absorbed drilling and properly fitted tool weights bring sharp drilling blows that lead to high-speed penetration. Quick pick-up of tools helps, too . . . adds to drilling effectiveness by permitting a maximum number of blows per minute.



Several features help boost working time . . . full-length caterpillar mountings for fast moves between drilling sites; permanently attached stabilizing jacks for speedy set-ups; built-in tool wrenches (available on all except the 22-T) for easy tool changes.



Because of their ability to drill larger holes (5⅝" to 12") than can be handled by wagon or tripod drills, Bucyrus-Eries are able to prepare the same volume of material with far fewer holes.



Less maintenance is required because the strength of the machines' electric-welded frames and derricks resists the stresses of long and constant use. Derrick-head shock absorbers and rubber-insulated heel and spudding beam sheaves protect the units from harmful shock.

Sturdy power units (gasoline, diesel, or electric, depending upon your requirements and the size of the machine) reduce operating costs by applying power most efficiently and keeping fuel consumption low.

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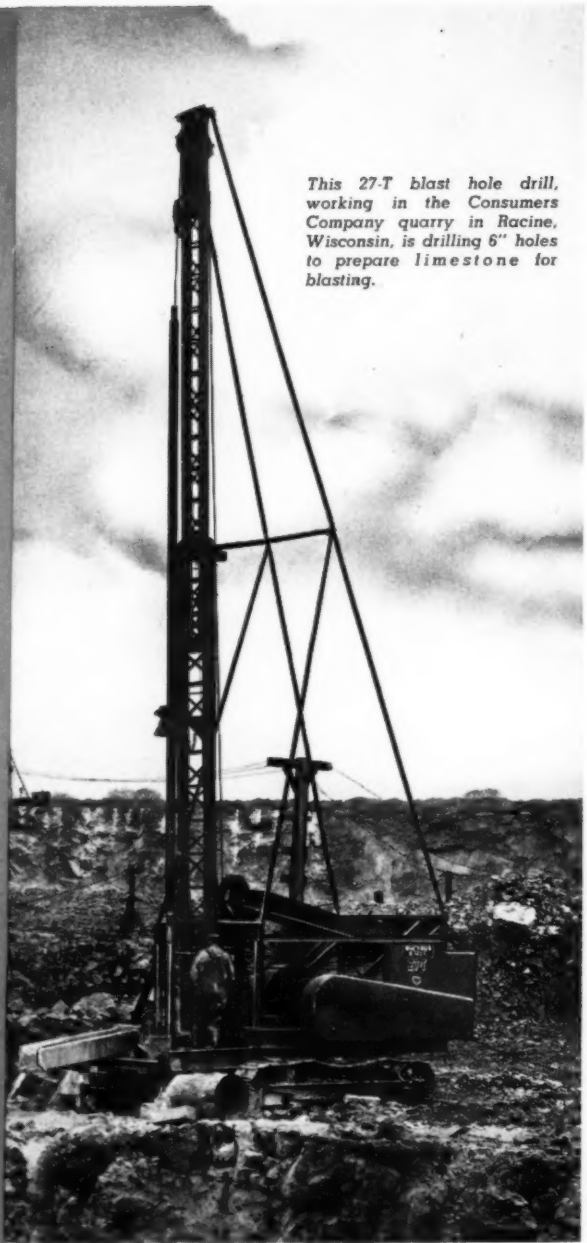

This 27-T blast hole drill, working in the Consumers Company quarry in Racine, Wisconsin, is drilling 6" holes to prepare limestone for blasting.

Bucyrus-Eries are money-savers all the way. It will be worth your while to investigate these blast hole drills when you plan your new equipment purchases.

22-T 5⅝" to 6⅝" holes
27-T 6" to 6⅝" holes
29-T 6" to 9" holes
42-T 9" to 12" holes

Gasoline or electric power is available for all machines . . . diesel for all except the 22-T.

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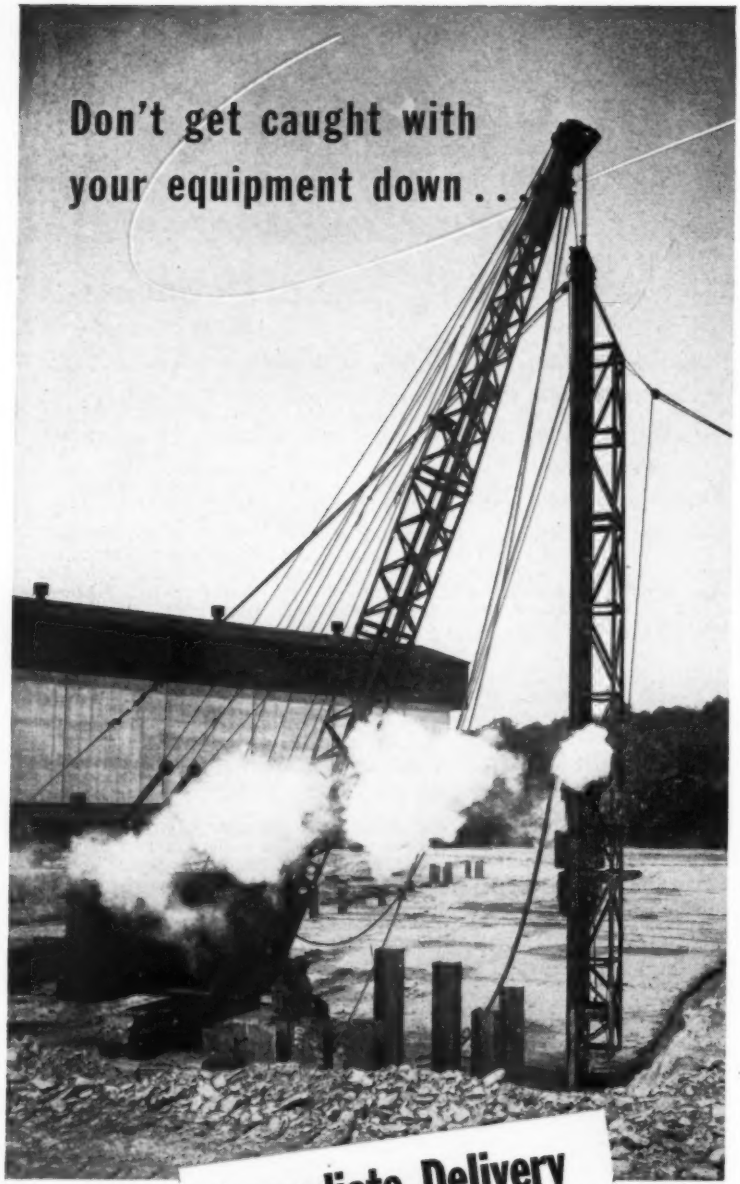

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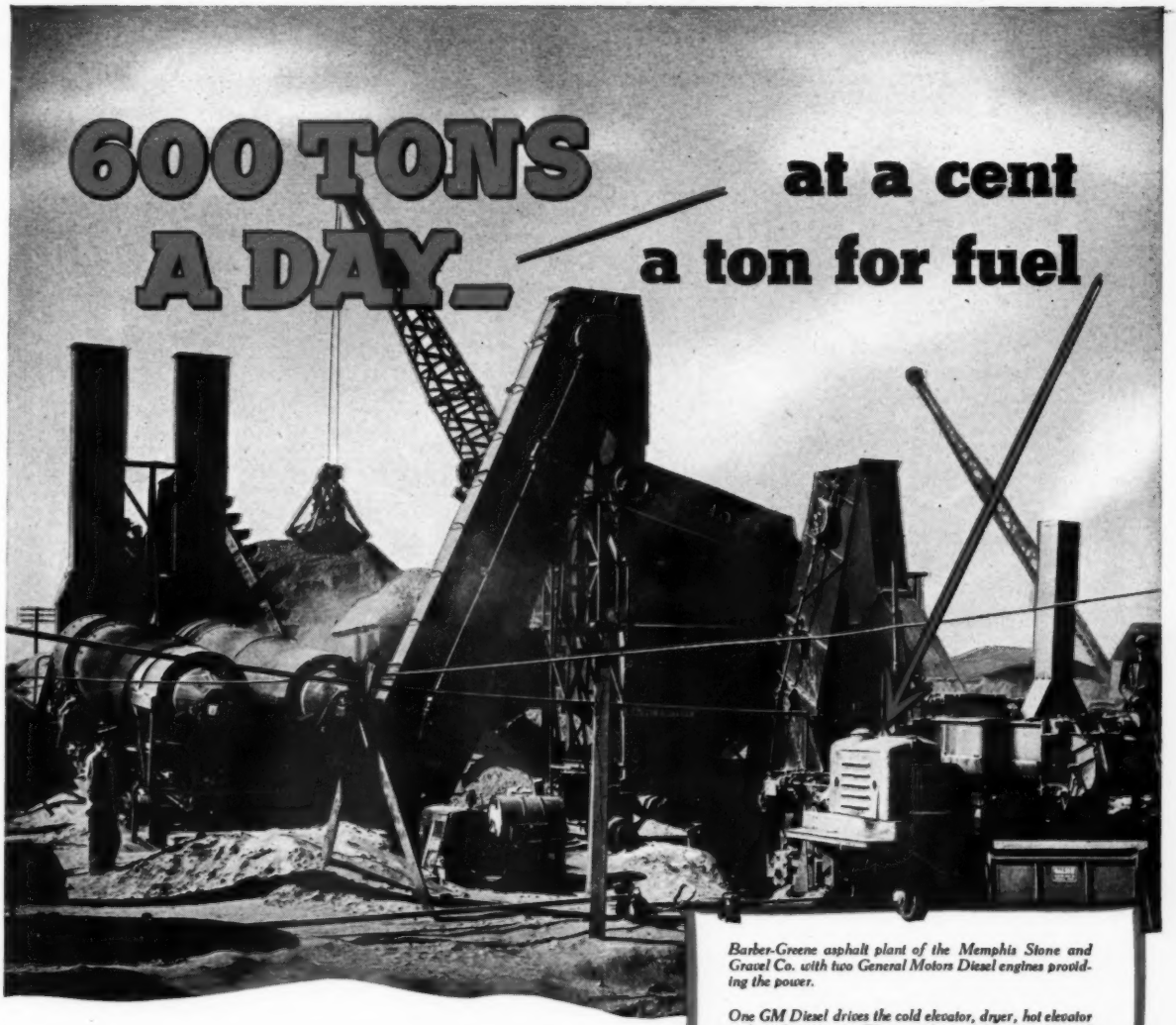

Barber-Greene asphalt plant of the Memphis Stone and Gravel Co. with two General Motors Diesel engines providing the power.

One GM Diesel drives the cold elevator, dryer, hot elevator and gradation unit. The second runs the pug mill and the elevator which keeps it supplied.

Processing asphalt is a tough dirty job. It's just the kind of job that's a natural for GM Diesel power. GM Diesels can take a beating, keep steadily on the job, and all the while deliver power at exceptionally low cost. In this case on the Barber-Greene asphalt plant, at 1¢ a ton for fuel.

Being 2-cycle with power at every downstroke, GM Diesels are compact and can go to work in places where Diesels couldn't be used before. They're easy starting, need little attention, and are quick to respond to varying loads.

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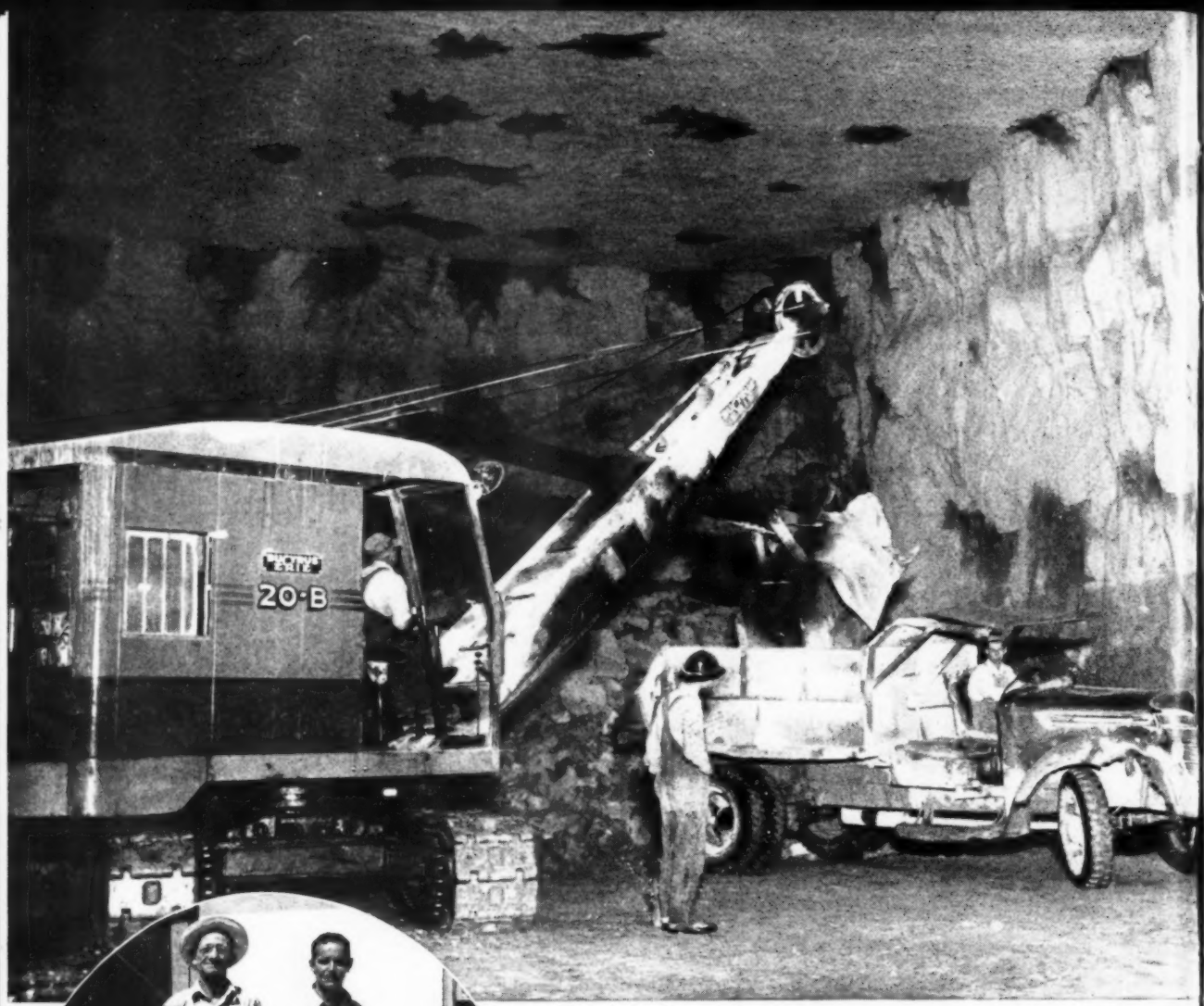
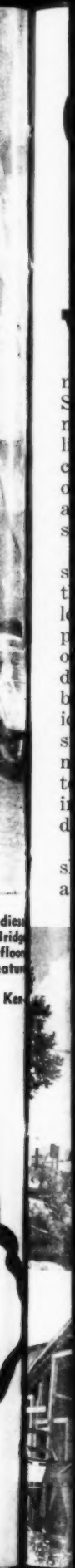
DIESEL BRAWN WITHOUT THE BULK



• Left Photo: Ed Sallee (left) and Elmer Lane are assistant superintendent and checker, respectively, at High Bridge Quarry.

• Above: Bucyrus-Erie ¾-yd. diesel shovel handles loading in High Bridge mine. Note unusually smooth floor and ceilings, an outstanding feature of this mine.

• Below: Distribution of active Kentucky Stone Company quarries.



QUARRYING LIMESTONE with ¾-Yd. Shovels

Covering operations in four of the ten Kentucky Stone Company quarries scattered about the state, this article describes the use of relatively small shovels for loading out limestone — principally in underground workings.

WITH small-sized shovels occupying the key loading positions in each of nine active quarries, Kentucky Stone Company annually produces more than 1½ million tons of limestone — enough to make the company one of the top producers of railroad ballast and highway aggregates in the Blue Grass state.

The shovels, all of them ¾-yd. size, are especially well suited to the company's production problems because nearly all of the present workings are mines, the operations having been taken underground when stripping costs became excessive. The small physical dimensions of shovels of this size permitted use of standard models in the room-and-pillar system of quarrying without requiring modifications of booms or dipper sticks.

The company's experience has shown that the small machines are easy to move about from heading to heading in the labyrinthian maze of the limestone mines, and that the units can work at high speed in the relatively small rooms because the swing space required is not great. They've also found that the machines themselves stand up well under the steady rock work.

Operations at four of the company's ten quarries — all located in central Kentucky, yet widely scattered in this area—were observed in midsummer of this year. These were the plants at Russellville, Tyrone, High Bridge and Irvington. Other workings are being actively operated at Upton, Yellow Rock, Stephensburg, Mount Vernon and Mullins, at which plants either Euclids or White motor trucks are in use. A tenth quarry, at Sparks, is not currently being worked.

The Russellville quarry, where operations were taken underground in 1937, is one of Kentucky Stone Company's major plants. Here a Bucyrus-Erie ¾-yd. single-motor electric shovel loads out previously drilled and blasted stone in rooms 30-ft. high by 50-ft. square. This shovel's hourly output averages 150 tons, a pace which keeps the crusher well supplied with stone. The shovel loads to four Mack EHX trucks with 3-ton St. Paul truck bodies.

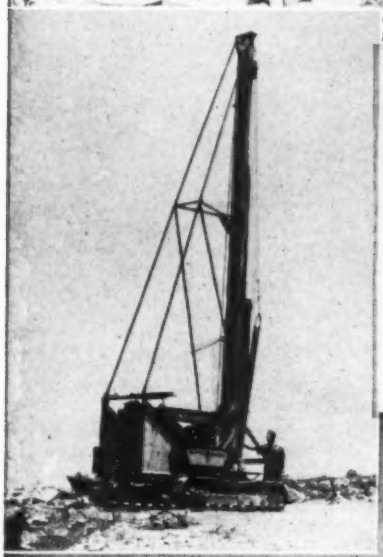
The pace at Tyrone is somewhat slower, principally because of the physical problems involved. This

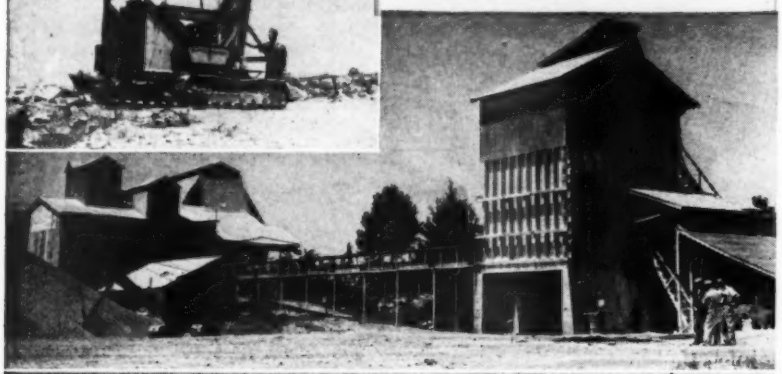
• Left: General view of crushing plant at High Bridge.

• Right: International truck loads 4-yd. Western quarry car, pulled by cable to processing plant atop hill.

• Left: Cable-operated quarry car dumps to crushers at end of 100-yd. trip.

• Right: At the halfway point in its trip up steep incline from quarry floor, the 4-yd. car travels to crushers.





• Above: W. C. McMahan (left), superintendent at Irvington, is pictured before large crushing plant with F. L. Compton, checker.

• Left: Bucyrus-Erie 22-T blast hole drill takes care of primary drilling. It averages 45 ft. per day on holes that run 50 to 68 ft. deep.

• Below: A conveyor connects the large and small plants.

• Bottom: Loading to trucks and cars in the Irvington stockpile is a Bucyrus-Erie ¾-yd. shovel. Visible at right rear is Bucyrus-Erie 22-T blast hole drill used at this quarry.

plant is located in a high hill almost on the very edge of the Kentucky River. The mine entrance is at the foot of the hill while the processing plant is located, by necessity, atop the hill. Stone is brought up to the plant by means of a 220-ft. vertical electric elevator consisting of two 3-yd. skip buckets operating alternately on tracks in the shaft. The capacity of the elevators thus limits output of rock at the headings.

Loading, which averages 100 tons per hour, is handled by a Bucyrus-Erie 20-B ¾-yd. shovel with single-motor electric drive. This machine was used at Russellville until the new 22-B was put into service in May. The 20-B loads to two White and one Ford truck, all of which are equipped with St. Paul 4-ton truck bodies.

Diesel Rig at High Bridge

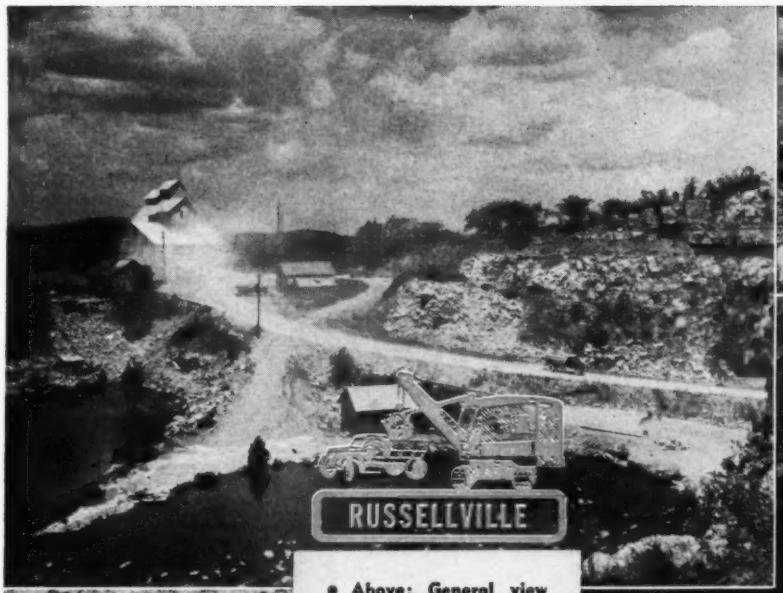
At High Bridge, another underground quarry, loading is handled by another Bucyrus-Erie ¾-yd. 20-B. This one, however, is a diesel machine. An internal combustion machine can be used here because the working places are all close to the mine entrance and the ventilation is exceptionally good.

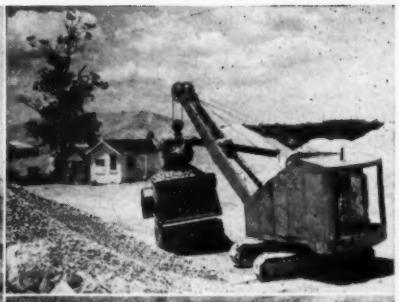
Two International D35 trucks haul stone to a ramp, dumping into a 4-yd. Western cable-operated quarry car. The haul from the back of the mine to the car is about a quarter mile, and the quarry car completes the trip to the processing plant with a 100-yd. ascent up the steep slope.

Still another Bucyrus-Erie 20-B with ¾-yd. dipper is used for loading at the Irvington open-pit workings. This diesel shovel averages about 100 tons of stone per hour in loading to three International trucks, and one 1941 Chevrolet truck—all rated at 2½-tons capacity. Two 5-ton White trucks are also in use but the trucks have no specific job, and are shifted about the quarry and plant in accordance with changing needs.

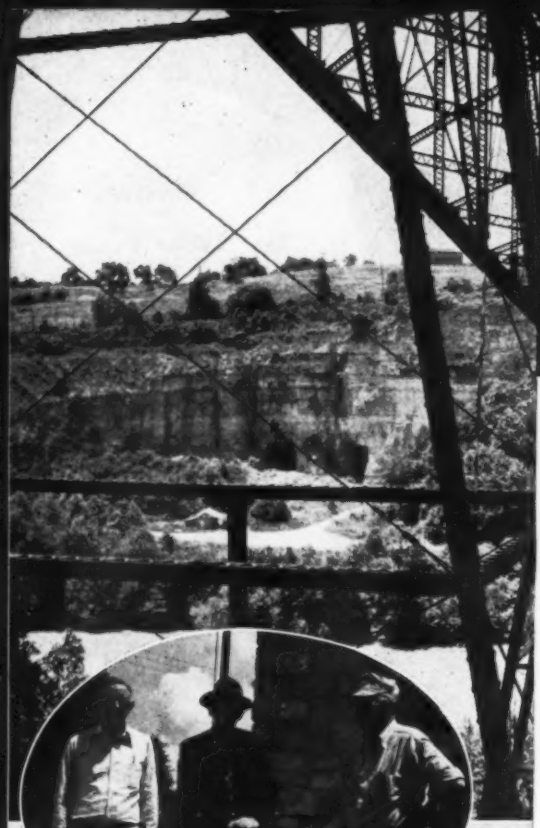
Stockpile with Bulldozers

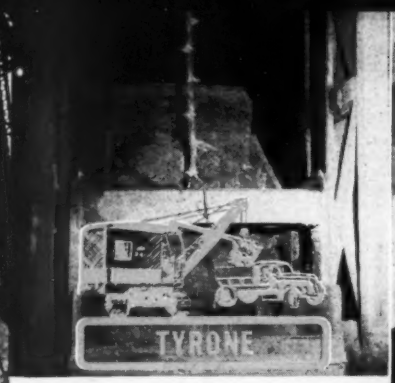
Russellville and Tyrone use bulldozers to pile blasted stone to facilitate loading. A Caterpillar D-6 tractor with LaPlante-Choate hydraulic bulldozer, in use at Russellville, is also used to clean up

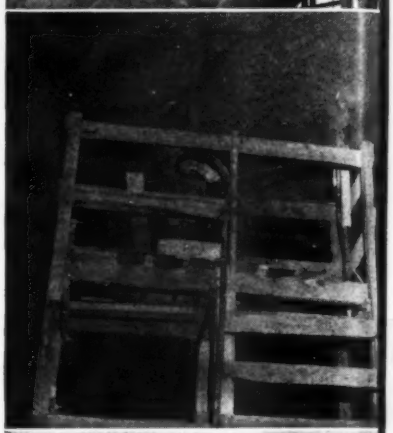




- **Above: General view of Russellville quarry.**
- **Left: Standing in front of the office are Ray A. Vencill (left), superintendent, and Otto Brock, checker.**
- **Top Right: Loading from stockpile to trucks.**
- **Right: Rock pile resulting from shooting lower half of rock face is used as foundation for drilling upper half, using a Sullivan safety stoper.**
- **Right: Mine entrances to Russellville quarry. Depth of first advance varies from 29 to 31 ft.**
- **Bottom Right: Drilling into heading is special wagon drill developed for Kentucky Stone Co.**
- **Below: A ¾-yd. Bucyrus-Erie electric shovel loads an average of 150 tons of blasted rock per hour.**







• **Above: White truck dumps to one of the 3-yd. skip buckets used at Tyrone to carry blasted rock up a 220-ft. shaft to crushers.**

• **Right: Skip buckets, loaded within mine, discharge blasted rock to crushers at top of 220-ft. elevator shaft.**

• **Left: A towering railroad bridge frames this view of Tyrone quarry, as seen from across the Kentucky River.**

• **Inset at Left: At Tyrone, R. I. McDonald, superintendent of Tyrone and High Bridge quarries (left) is pictured with E. J. Allen, engineer, and Charlie Bryant, assistant superintendent for Tyrone quarry.**

• **Right: Ceiling holes are drilled with a Sullivan stoper working from a 20-ft. scaffold.**

• **Left: Bucyrus-Erie TD-9 Dozer-Shovel, shown working in stockpile, is also used to maintain roads and for general utility work.**

• **Below: A ¾-yd. Koehring Shovel loads railroad cars from the Tyrone stockpile.**

• **Bottom: Truck loading to railroad cars is employed when cones cannot be conveniently reached by shovel.**

roads and haulways and for work in the stockpiles. An Adams road-grader also helps keep roads maintained, but roads are not treated in any way. Tyrone makes use of an International TD-9 tractor with Bucyrus-Erie Dozer-Shovel for piling blasted rock.

Drilling procedure varies but little in the three underground mines mentioned. Two KSC wagon drills especially developed for Kentucky Stone Co. are used for primary drilling at Russellville, with 1¼-in. round drill steel and Timken jackbits. Tyrone and High Bridge each use two Cleveland D-14 drifter drills, and general procedure is to drill holes averaging 12 ft. in depth.

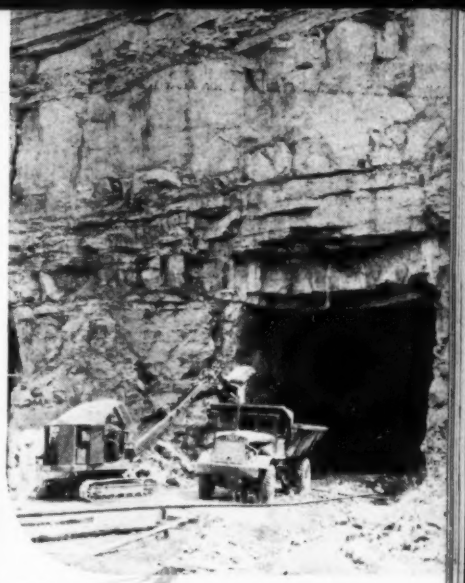
At Russellville, primary holes are spaced 5 ft. apart across the bottom of the face, and the rock pile resulting from shooting these holes is used as a base for drilling the top half of the face with a Sullivan safety stoper using 1-in. hexagon steel, and drilling by the slashing method. Hercules Gelamite No. 1 and No. 2 is the explosive used—about 500 lbs. to the room—and it pulls about 2¼ tons of stone per pound of explosive. The 3-man drill crew consists of two drillers and a helper who assists both.

Drilling and Shooting at Tyrone

About 50 holes are drilled into each heading at the Tyrone quarry, and are loaded with 500 lbs. of Hercules No. 3, 60 per cent gel., which brings down about 800 tons of stone. Ceilings are drilled with Sullivan SS10 stopers—two to a room—using 1-in. steel and drilling from a 20-ft. scaffold. Three lines of 10 holes each are drilled and loaded with 250 lbs. of Hercules No. 2, 40 per cent gel. High Bridge uses virtually the same method, using 300 lbs. of explosive per head and bringing down 800 tons of rock.

At Irvington, the open face quarry, drilling is handled by a Bucyrus-Erie 22-T blast hole drill. Holes are 6-in. laid out 15 ft. apart, in rows 17 ft. apart. They are drilled to a depth of 50 to 68 ft. The drill averages 45 ft. per day, though under good conditions it has put down an entire hole in one day. Primary blasting occurs quarterly, shooting 18 to 23 holes which have been loaded with Hercules Gelamite and Hercomite and pulling 30 to 40 thousand tons of stone. All four quarries use Ingersoll-Rand jackhammers for secondary drilling.

Scaling operations are carried out according to a standardized procedure at the underground mines. A special scaling rig is used, consisting of a crow's nest

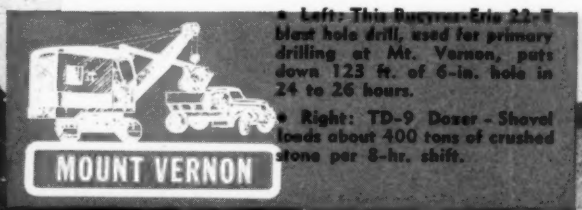


• Yellow Rock quarry, where this Bucyrus-Erie ⅜-yd. shovel loads crushed and uncrushed stone, produces from 27,000 to 30,000 tons of stone monthly.

or basket built onto the end of a 35-ft. boom mounted on a truck. The scaler rides the boom, which can easily be spotted by the truck driver at any point in the ceiling, and can be raised or lowered as conditions require. The same rig is often used to string lights inside the mine or to make drillings and erect crossovers to which light wires are attached.

There is striking similarity in the general mining plans of the three underground quarries visited, with each of the three employing rooms of about the same size in the room-and-pillar procedure. At Russellville rooms measure 50-ft. square by 30-ft. high, with the initial advance being made into the bottom of the

(Continued on page 720)



• Left: This Bucyrus-Erie 22-T blast hole drill, used for primary drilling at Mt. Vernon, puts down 123 ft. of 6-in. hole in 24 to 26 hours.

• Right: TD-9 Dozer - Shovel loads about 400 tons of crushed stone per 8-hr. shift.

Davis Dam

Utah Construction Company is handling 15 million yards of dirt and rock to complete the final major link in the Colorado River control program. The $77-million-project, which will become in 1949 an additional source of power for the southwest, includes a 4-million-yd. earth-and-rock-fill dam, a 4,500-ft. by-pass channel to carry the 60,000 cfs. (maximum) flow during construction and a power plant with 225,000 kva. peak capacity.

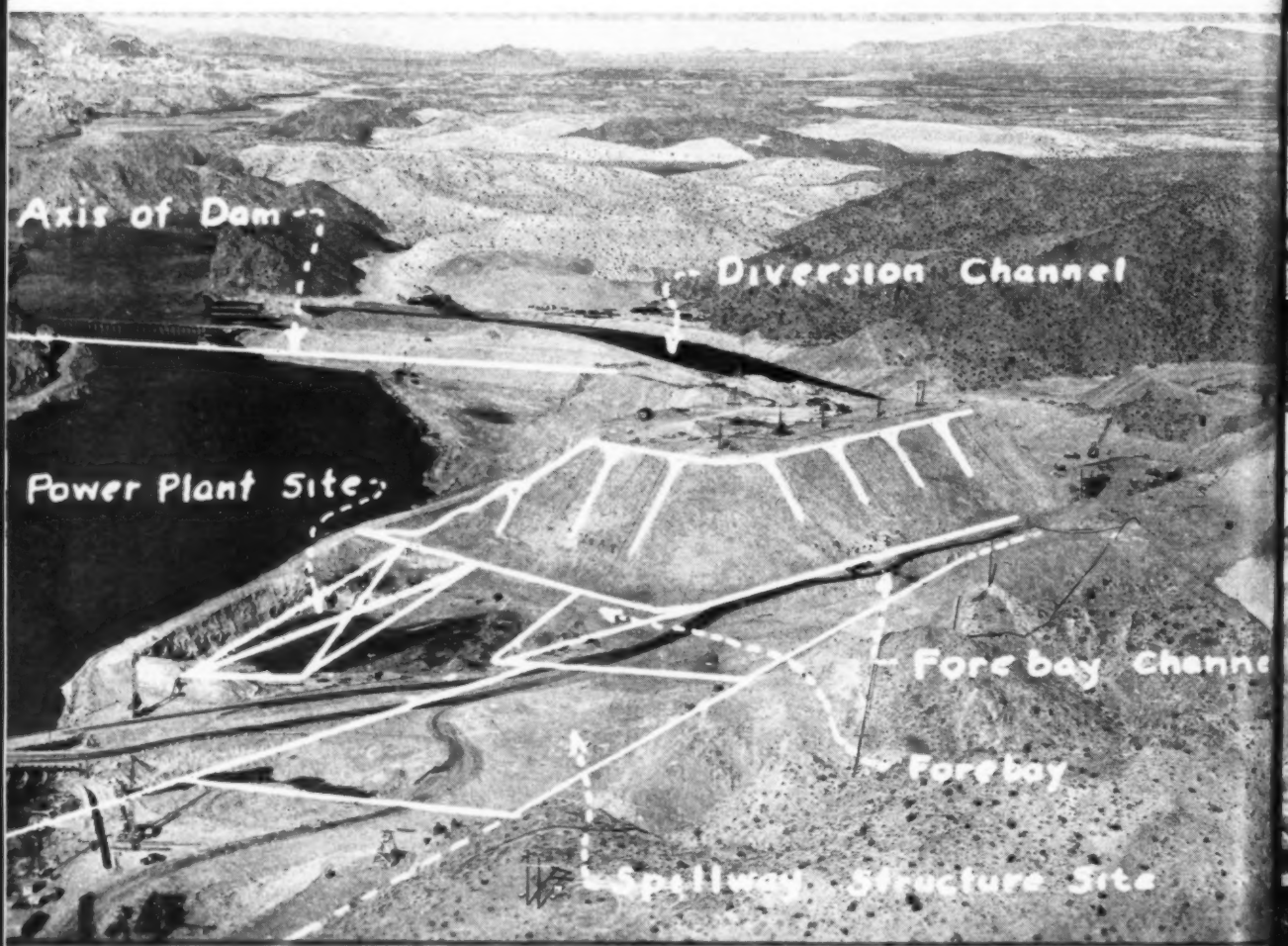
By MARK McMILLIN

FOR many centuries the Colorado River, rising in the snow-capped mountains of Colorado and Wyoming, and flowing through canyons and desert to empty into the Gulf of California 1400 miles from its origin, had flooded low-lying areas along the river in Arizona and California. Realizing the need for harnessing and conserving the turbulent river's waters, Congress in 1928 passed the Boulder Canyon Project Act. This legislation authorized the construction of Hoover Dam and the All-American Canal System.

Construction of Hoover Dam was begun in 1931, and completed in 1936. First control of the river began early in 1935 with the closing of the canyon wall diversion tunnels at the dam. Other features of the Boulder Canyon Project—The Imperial Dam, the All-American Canal desilting works, and the All-American Canal—were begun in 1934 and substantially completed in 1940.

By 1941, the 80-mile long canal, extending west through Imperial Valley, was supplying water to some 400,000 acres in the valley. Today, the canal also serves the Yuma Project near Yuma, Arizona.

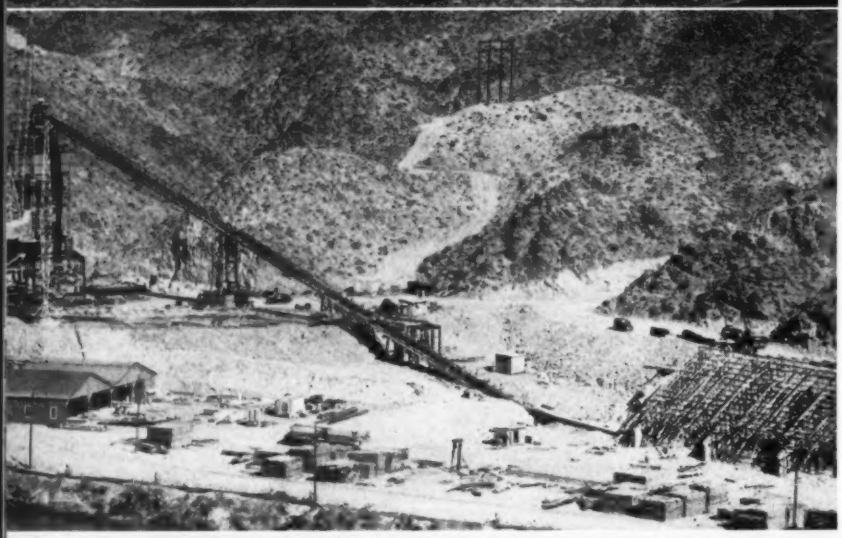
Construction of Parker Dam some 150 miles downstream from Hoover Dam was begun in 1934 and completed in 1943. The principal purpose of the project, which was constructed by the Bureau of Reclamation with funds advanced by the Metropolitan Water District of Southern California, is to



• Left: This view from the Nevada side of the Colorado River shows the contractor's camp which provides complete facilities for 1500 people.

• Inset: 2½ yds. of blasted rock from the power-plant area crunch into a 13-yd. Euclid trailer pulled by Cummins-powered Euclid tractor.

• Below: General view shows, from left to right, power-plant, intake forebay channel and spillway structures. Draglines are 3½ yd. Manitowoc Speedcrane 3900 (left), and 2½ yd. Northwest 80D.



provide a forebay and desilting basin from which water is pumped into the District's 240-mile Colorado River Aqueduct. This aqueduct furnishes water to 14 cities and municipalities in the Southern California coastal plain. The project also serves to afford flood control of the river below Hoover Dam, to generate electrical energy, and to reregulate river flow for downstream irrigation and power development.

War Halted Construction

Today, the Bureau of Reclamation is building Davis Dam 67 miles downstream from Hoover Dam, and 88 miles upstream from Parker Dam. Construction of the project was under a $19-million-contract begun in June 1942, and was halted in the same year because of the war. With the end of the war, construction was resumed in April of 1946 under a

• **Top Left: Men load 2¾-in. holes with Atlas 40% gel in preparation for 12,800-lb. blast in the southeast corner of the switchyard.**

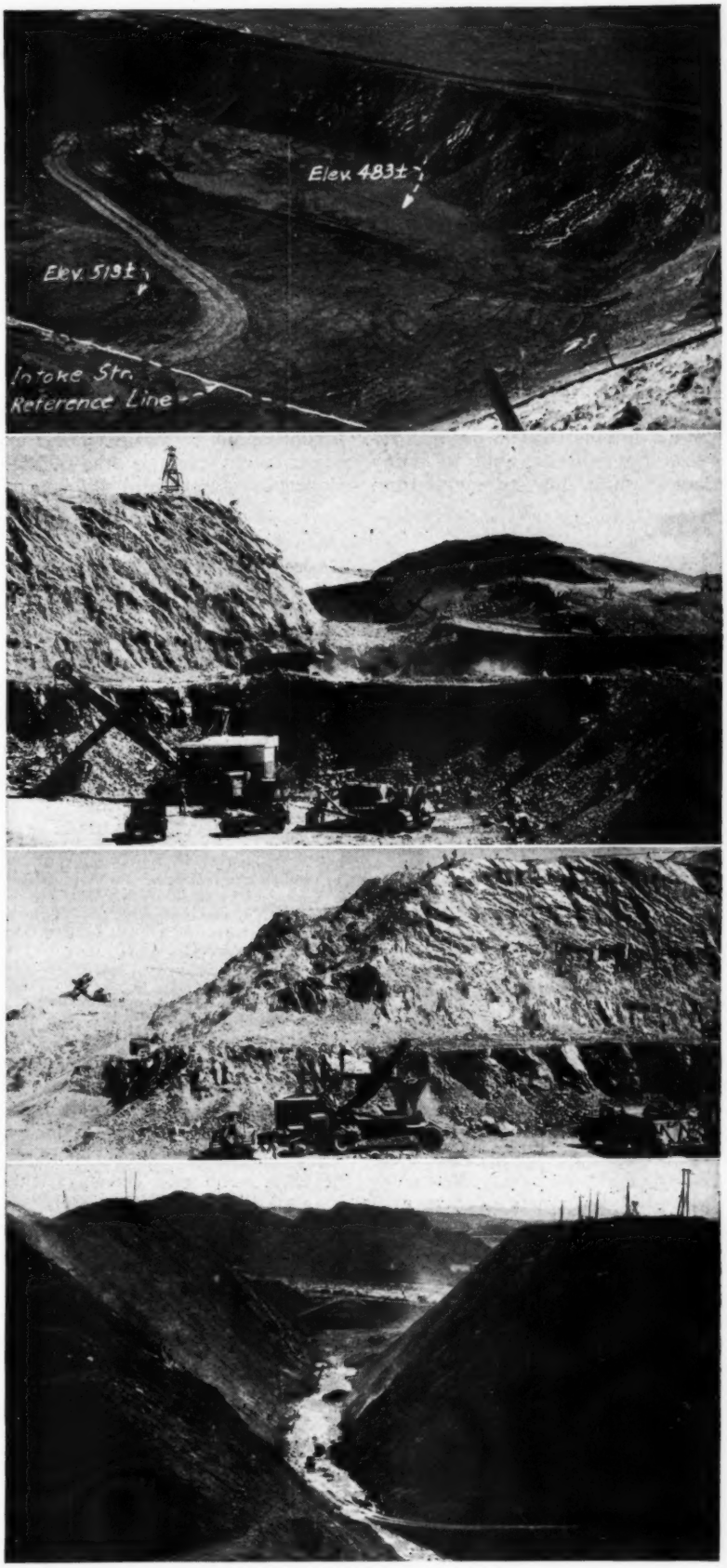
• **Left: Concrete plant is serviced by Whirly crane and 36-in. 4-ply Goodyear conveyor belt.**

• **Below: View from Bullhead Rock, shows upstream terminus of the diversion channel.**

new contract with the Utah Construction Company, which also held the first contract.

Originally, the project was referred to as Bullshead Dam, so-called because of a rock in the river at Pyramid Canyon, said to resemble the head of a bull. The project was renamed in 1941 in honor of Arthur Powell Davis, who served as director of the Reclamation Service from 1914 to 1923 and who helped lay the foundation for the control of the Colorado River.

Spanning the great river at a narrow point known as Pyramid Canyon, Davis Dam is expected to reach completion in 1949. At 1945 prices, the dam, powerplant, and transmission system will cost approximately $77,000,000. Construction of the dam, powerplant, spillway, and other appurtenant works will require approximately $47,000,000, and the transmission lines and substations to utilize the power will cost approximately $30,000,000. A 128-mile power transmission line will carry power from the dam southward to the Gila Project in Arizona. In addition to servicing Yuma, Phoenix, Tucson, and other areas in Arizona, the line will also transmit supplementary power to areas in Southern Nevada and Southern California, particularly the Imperial Valley.



• **Top Photo: The powerplant area as seen from the southeast corner of the parking area.**

• **Right: 3½-yd. Lima 1201 and 2½-yd Bucyrus-Erie 54-B (background) shovels load out blasted rock in the intake and forebay areas. Dressing the bench in the foreground of this upstream view is a D-8 Caterpillar-mounted Le Tourneau bulldozer.**

• **Right: 2½-yd. 80-D Northwest shovel excavates for intake structure.**

• **Bottom Photo: Excavation approaches final grade in the southern end of the forebay channel.**

Purposes of Davis Dam

In general, the dam is being built to realize a greater degree of conservation of Colorado River water. The primary purposes are: 1) to regulate the flow of the river below Hoover Dam in order to provide benefits to the presently irrigated areas downstream; 2) to service the terms of the treaty

with Mexico for the division of the water of the Colorado and Tiajuana Rivers and the Rio Grande; 3) to generate power. All costs of the dam are to be allocated to power and it is estimated that power revenues will pay off the project's cost in 50 years with interest at three per cent.

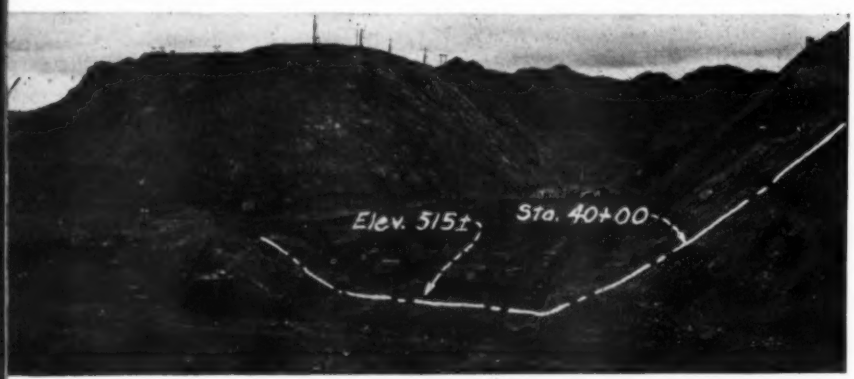
Confined by the steep walls of Black, Eldorado, Painted, and Pyramid Canyons for most of its length, the reservoir created by the dam wil have a maximum length of more than 60 miles, maximum width of four miles, and will back up to within a mile of Boulder Dam. As soon as the dam is completed, visitors and vacationists will be able to enjoy game fishing, boating, swimming, and other sports in the new recreational area.

The dam itself will be 1600 ft. long, with a crest 50 feet wide, to accommodate a two-lane highway. The earth and rock-fill barrier, rising 138 ft. above the river bed, will create a reservoir with a capacity of almost two million acre-feet extending to the tail race of the Hoover Dam power plant.

Approximately four million cu. yds. of earth and rock-fill are required to form the dam, and about 500,000 cu. yds. of concrete and 15 million pounds of steel reinforcing bars go into the forebay, spillway, and powerplant structures. More than three million cu. yds. of rock and earth have been excavated to form the diversion channel.

On January 15, 1946, the Utah Construction Company, one of the largest construction companies in the West, was awarded the contract—biggest let by the Bureau of Reclamation since the war—for the construction of the dam, powerhouse, spillway, and other structures, at a cost of $21,462,-505. The notice to proceed was given in March, 1946, and the dam was officially started on April 19, with a blast of thousands of pounds of dynamite on the diversion channel route.

The contract includes 15 million yds. of earthwork (some material is handled two or three times) and payment ranges from 10 cents a yd. for rock screenings in the dam embankment to $30 a yd. for excavation in tunnels and shafts. Concrete work—total 455,000 cu. yds.—ranges from $8.90 a cu. yd. for concrete in massive sections of the intake structure to $67.50 a cu. yd. for concrete in the superstructure of the powerhouse.



• Upstream view of excavation work in forebay channel upstream from spillway and outlet structures shows, from left 2½-yd. Northwest 80-D dragline, 2½-yd. Bucyrus-Erie 54-B shovel, 3½-yd. Lima 1201 shovel and 2½-yd. Northwest 80-D shovel. Euclid wagons are 10 and 13-yd. respectively. Drills putting down 2½-in. hole in the forebay channel are Ingersoll-Rand FM-2's.

The central or impervious portion of the dam is being placed in 6-in. moistened and rolled layers of clay, sand and gravel with a blanket of the same material extending over the entire upstream portion of the foundation. Portions of the embankment immediately upstream and downstream from the impervious portion are semi-pervious and consist of layers of moistened rock screenings, 4-in. or less, rolled in 12-in. compacted layers. The upstream and downstream portions of the embankment are built up of rock in 4-in. or greater layers.

A cutoff trench with a bottom width of 120 ft. was excavated to a depth of greater than 60 ft. across the river bed. Cutoff trenches on the abutments were excavated to firm rock, and concrete cutoff walls constructed. No cutoff walls were used in the trench across the river bed.

Characteristics of Gneiss

Impervious material is obtained from a borrow pit some three miles from the dam. Most of the required pervious and semi-pervious material was supplied from the diversion and forebay channel excavation and stockpiled until needed. This material is of igneous origin, consisting mainly of hard broken gneiss. Experience with gneiss during the early phases of excavation work showed that it will break up readily when exposed to the elements and to ordinary handling.

The resulting product meets the design requirement of a stable, semi-pervious material with a rather low permeability rate so it will function both as a comparatively impervious material with respect to the foundation and outer layer, and will be pervious compared to the core of the dam. Rock for the dam is handled several times: excavated, sorted into two sizes by grizzlies installed for the purpose, stockpiled separately, and finally placed in the dam.

Three Major Phases

The first phase of the dam construction was completed considerably ahead of schedule. This phase included excavation of the 4500-ft. diversion and forebay channel. The upstream or diversion portion of this channel—now being used as a diversion channel—has a bottom width of 200 ft. and the forebay portion, 75 ft. at the bottom and increasing at the downstream end to accommodate the forebay structures. The maximum cut was 220 ft.

The second stage includes the placing of concrete in the spillway, forebay area, powerplant intake structure, powerplant, and appurtenant structures.

The third phase of the construction program involves the construction of the 138-ft. earth and rock-fill embankment across the river.

In the first 265 working days,

(Continued on page 721)

"WONDER WHAT THAT GUY MEANT WHEN HE SAID THIS JOB WAS WORTH A THOUSAND CLAMS TO US?"

"ARE YOU SURE THAT NEW CAT SKINNER HAS HIS HEART IN HIS WORK?"

Finish Water Intake for Rochester's Powerhouse

The first leg in an extensive expansion program near Charlotte, N. Y., involved 129,000 yards of excavation —50,000 of it underwater in hardpan—to place a mile of 7-ft. concrete pipe for a condenser water intake. Merritt-Chapman & Scott Corporation, Cleveland, Ohio, was the general contractor.

by RALPH Z. KIRKPATRICK

• The dredge Amazon finishes the underwater trench with its 3-yd. Wellman clamshell bucket.

MERRITT, Chapman and Scott Corporation completed last month a 4000-ft. underwater and 1000-ft. land pipeline job near Rochester's Lake Ontario Harbor. The line will supply water to the condensers of a new Lakeside Powerhouse.

The project is the first leg of an extensive expansion program for the Rochester Gas and Electric Corporation. The company has a 5-year, $52,000,000 new construction-equipment schedule ahead in its effort to keep abreast of agricultural-industrial westerly New York's growing demands for more gas, steam and electricity.

Dry Excavation Sublet

Dryland excavation for the new pipeline was sublet to A. Friederich and Son Co., Rochester while the general contractor handled the underwater work with his own marine equipment.

Underwater, the hardpan strata required blasting over the entire 4000-ft. length. Drilling was accomplished from a "Drillcraft" barge mounting a battery of 6-in. streamdriven drills. Since lake navigation requires a minimum 21-ft. clearance, holes were put down 28 ft. deep or more. After loading, tamping and wiring of dynamite in each hole, the charge was detonated electrically from the drill barge, previously winched away to a safe distance. Shattered material was removed from the underwater excavation and piled alongside by the dredge Amazon using a 3-yd. Wellman clamshell bucket.

Divers Helped Place Pipe

Pipe sections, 7-ft. inside diameter by 24 ft. long, were tow-barged from the curing-yard dock and lowered into the finished trench by derrick. Divers, working simultaneously from opposite sides of the pipe, made the necessary connections of the pipe to place sections below the lake bottom. As a final operation, the trench was backfilled by the dredge.

Subcontractor Lockjoint Pipe Co. of New Jersey fabricated, poured and cured the concrete pipe-sections under water and steam spray at a plant especially set up on the Charlotte municipal docks. The reinforcing steel coils were mechanically wound around a mandrel and supporting strips spot-welded on. The finished forms were then locomotive-craned around the steel and casings filled with concrete from a nearby mixing plant.

To screen the intake — three quarters of a mile out in the lake —from foreign materials, a 60 x 26 x 7-ft. crib was constructed of heavy timbers. The banks of the Genesee River were lined with people September 15 when it came time to launch this huge structure for towing down the river to the lake. The crib was christened "Miss Ontario" by breaking a bottle of root beer over its side. After the launching was completed, the crib was towed to the site. It was then sunk and anchored in place at the end of the pipeline by filling and supporting it with rock.

Principal floating equipment on this project included the drill-barge, the derrick scow *Amazon*,

the derrick scow *Active*, a work boat or two, and the tug *Aubrey*. The drillboat and derrick scows—having donkey engines and winches aboard—maneuvered by a system of winching, on a quartering system of cables, to 18-ton concrete anchors. The tug was called on to advance these anchors as needed.

Up Project Cost

The new pipeline will give a gravity-feed of 33,000,000 gallons daily for the turbine condensers shortly to be installed in the proposed 4-unit steam-driven Lakeside Powerhouse. Until recently it was intended to make original installation of but one generating unit. However, authority has recently been given to install two units. The first will be installed in 1948, the second in 1949. The tentative cost estimate for the plant's final capacity of 160,000 kilowatts is $20,000,000. The current outlay of $8,000,000 is now raised to $12,500,000, due to the recent advancing of the powerhouse units' installations.

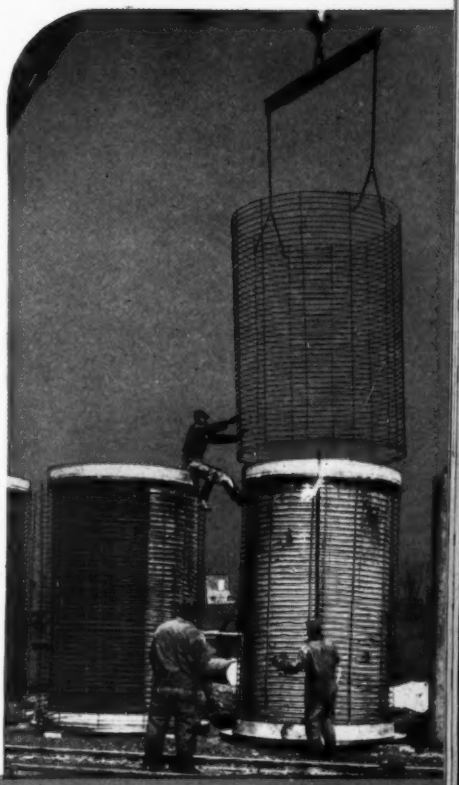
The intake project came under the direction of Mr. John E. Fredericks, Chief Engineer of the Rochester Gas and Electric Corporation. Mr. John Baker, his assistant, was in charge of field operations, with Paul B. Rombaut as Field Engineer; For Merritt-Chapman & Scott Corporation, Cleveland, Ohio, Mr. E. C. Wickstrom had been Superintendent until very recently, when he lost his life in an automobile accident. Mr. Alfred Suskind, Field Engineer, supervised the completion of the work.

Similar to Previous Job

The present project is strikingly similar to another contract Merritt, Chapman and Scott Corporation recently finished for Eastman Kodak Company last year. The Eastman intake is west of the present and parallels it. Virtually the same equipment and personnel were used in the performance of the two jobs.

The Eastman water-intake pipeline is constructed of 8,000 ft. of 54-in. Lockjoint pipe. Because of the smaller pipe on this job, the sections were cast in 16-

(Continued on page 724)



• Above: Placing outside reinforcing for a 12-ft. pipe section. With the inside form and reinforcing already in place, workmen will pour the section as soon as the outside form is lowered.

• Below: Merritt, Chapman and Scott Corporation base of operations up the Genesee River. Note pipe mold ready for pour in left center of photo.

EARTH moving problems turn into jobs that pay plenty of profits when International Diesels power the work!

More and more contractors are finding this out. They see how International Crawlers lug through heavy going to boil up capacity loads in their scrapers. And when the blades are up they see these outfits hurry to the fill to deliver big hourly yardage.

Then, when they discover how International's unbeatable operating economy keeps costs down, they know that here's *power that pays*. The low maintenance and fuel requirements of International Diesel Crawlers makes successful bidding and profitable results assured.

For facts about the benefits you get in these power-packed tractors, visit your International Industrial Power Distributor. Let him help you select equipment and the *power that pays*.

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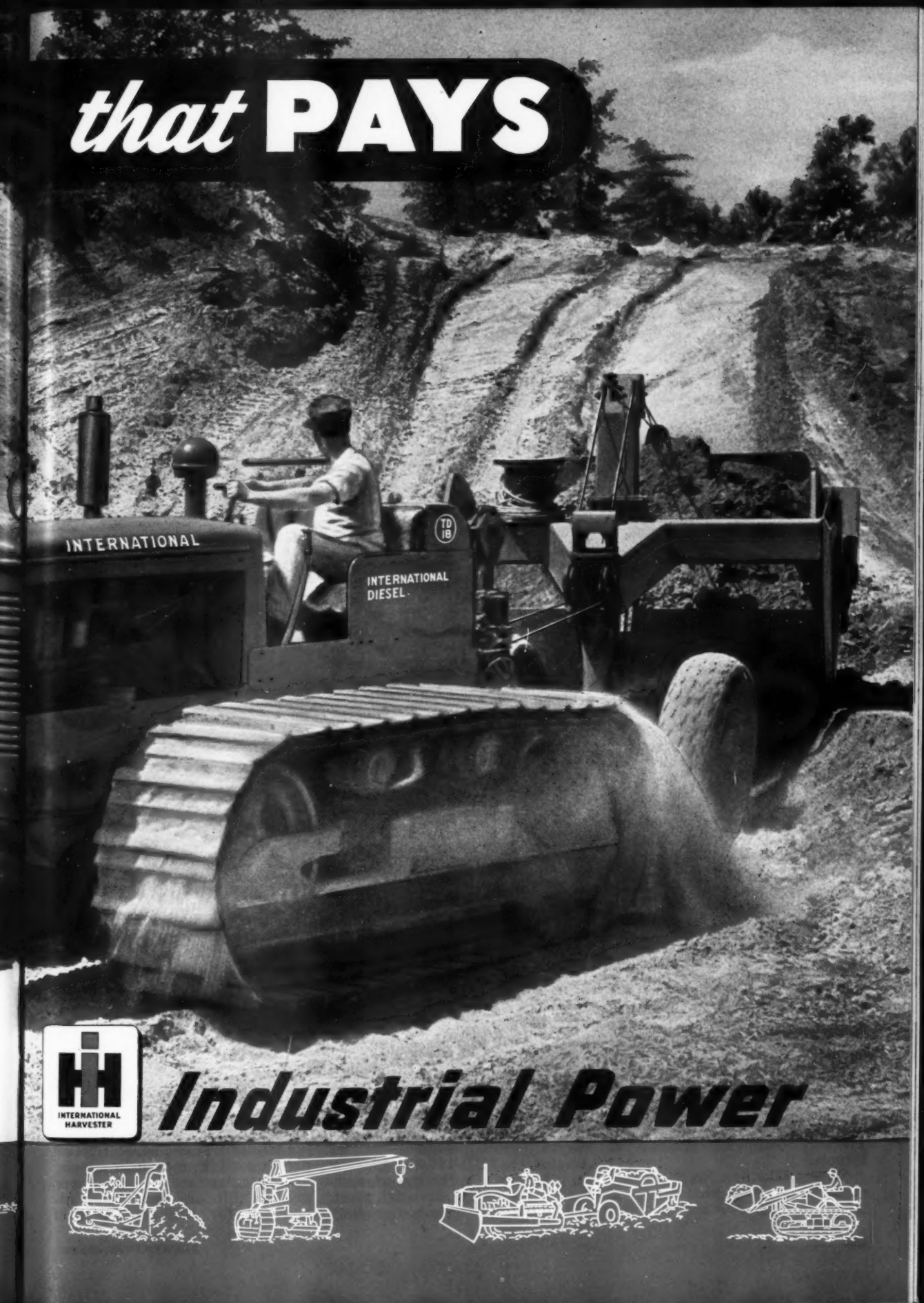
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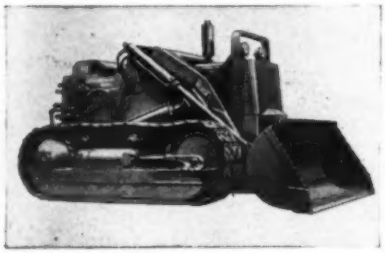
Equipment you ought to KNOW ABOUT

2-Yard "Bulldozer-Shovel"

Manufacturer: Frank G. Hough Company, Libertyville, Illinois.

Claims: Designed to fit the International TD-14 diesel tractor, this new Model 14 "Bulldozer-Shovel" incorporates many new features.

A large capacity, front mounted hydraulic pump, directly connected to the engine crankshaft, supplies power for all operations. By means of a lever the operator can raise, lower, hold or "float" the bucket, or apply down pressure when hard digging is encountered. The bucket may be



dumped at any height and returned by hydraulic power.

A full track width bulldozer blade can be attached quickly, enabling the unit to serve as a standard hydraulic bulldozer.

Differential Chain Hoists

Manufacturer: The Chester Hoist Company, Lisbon, Ohio.

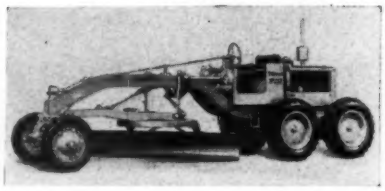
Claims: A new line of differential chain hoists, designed to meet present day demands for sturdiness and a high safety rate, is now in production.

Construction features include full weight accurately cast sheave wheels, high tensile malleable iron frames with reinforcing ribs; drop forged heat treated hooks, special hoist chains precision made to fit sheave pockets.

"Caterpillar" Motor Grader

Manufacturer: Caterpillar Tractor Company, Peoria 8, Illinois.

Claims: The new No. 212 motor grader is now in production. It takes its place alongside pre-



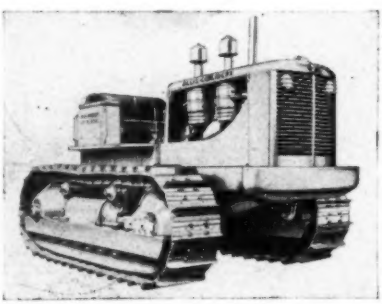
viously announced motor graders in the company's series, the Diesel No. 12 and the Diesel No. 112.

With maximum output increased to 45 h.p. as compared with the 35 h.p. of the model that preceded it, the No. 212 can offer higher working speeds on standard jobs and is able to tackle new work fields. The machine qualifies for numerous operations of road, street, and airport construction and maintenance; land leveling, terracing, oil mix work, and snow removal.

Its working advantages are said to stem from speed increases in all of its four forward speeds; from power operated mechanical controls equipped with effective brakes which prevent creeping or coasting under load; from arched front axles; and from manufacturing improvements resulting from the use of new, harder metals and better heat treatment.

"HD-19" Crawler Tractor

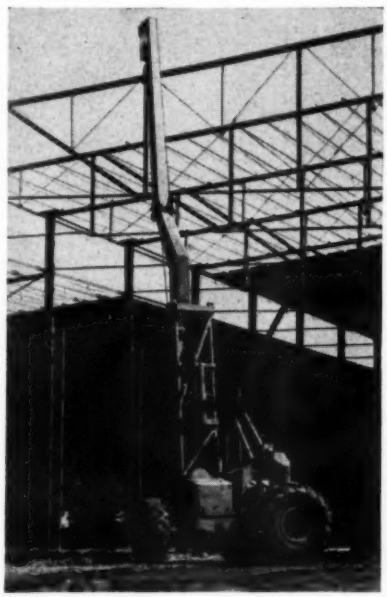
Manufacturer: Allis-Chalmers Manufacturing Company, Milwaukee, Wis.



Claims: Termed the world's largest, most powerful crawler tractor, the "HD-19" diesel is now in production at the manufacturer's Springfield, Illinois plant. The new machine embodies many new features, including: hydraulic torque convertor introduced into the power train of the tractor; positive-seal grease packed truck wheels; hydraulically powered steering levers; self-energizing brakes; easy engine accessibility.

Electric "Tournacrane"

Manufacturer: R. G. LeTourneau, Incorporated, Longview, Texas.



Claims: The new 15-ton "Tournacrane" has a maximum height of lift of approximately 30 feet and a maximum reach of approximately 26 feet behind the rear axle.

Mounted on four large pneumatic tires, the "Tournacrane" is diesel powered. It is said that it can easily move over obstacles and maneuver in cramped quarters.

Friction Proofing Oil

Manufacturer: Wynn Oil Company, San Gabriel, California.

Claims: This new friction proofing oil is meant to supplement regular lubricating oils and greases. It is specially compounded for the protection of

bearings, cams, wrist pins, cylinder walls, gears, and all other friction points in motors and machinery. When used in internal combustion engines, crankcase, transmission, and differential, it is said to insure an increase in horsepower up to 20 per cent and reduce operating temperatures and friction wear to a minimum.

The oil is designed for use in cars, trucks, aircraft, motorcycles, tractors, stationary engines, generators, and all types of machinery.

Hydraulic Earth Drill

Manufacturer: Buda Company, Harvey, Illinois.

Claims: This new hydraulically controlled earth boring machine drills 6-to 42-inch diameter holes to depths of 10 feet.

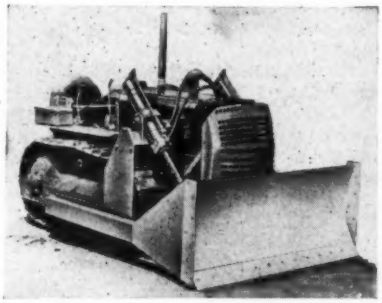
All special features of the machine are engineered for convenient transporting and minimum "set-up" time for digging. In confined areas where frequent raising and lowering of tower is necessary, this factor of "set-up" time is most important. Hydraulic power moves the tower into instant operating position. Other controls permit quick adjustment of drill head. All leveling adjustments for either straight holes or anchor holes are completely hydraulic.

This earth drill is said to be ideal for pole line construction, pre-boring for piles, foundation hole work, and for other jobs which require the constant moving of equipment. It is powered by a slow speed 4-cylinder Buda gasoline engine. The engine is mounted together with the drilling mechanism on an "I" beam of structural steel.

Hydraulic Bulldozer

Manufacturer: William Bros Boiler and Manufacturing Company, Minneapolis, Minnesota.

Claims: Available for D4 and D6 Caterpillar Tractors this line of bulldozers, both straight and angle, incorporates "fluid power control" provided by a LaPlant-Choate hydraulic pump.



According to the manufacturer, the D4 models are the only track-mounted, direct-lift, double-acting hydraulic bulldozers with full-floating trunnion rams.

These Bros bulldozers will be handled by Bros, LaPlant-Choate, and Caterpillar dealers. The production schedule offers the D4 straight units first, followed by the D4 angle, D6 straight and angle.

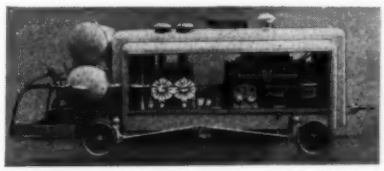
Water Suction Hose

Manufacturer: Hewitt Rubber Division, Hewitt-Robins, Incorporated, Buffalo 5, New York.

Claims: This new smooth bore water suction hose is of chernack loom type construction. According to the manufacturer, reinforcement of the hose consists of woven yarn carcass with interwoven round spiral wire. Due to its special type of construction, if crushed or kinked, it can be easily reformed to shape.

Rail-Car Compressor

Manufacturer: Davey Compressor Company, Kent, Ohio.



Claims: These new "Air Chief" self-propelled rail-car compressors are manufactured in 60, 105, 160, 210, 315 c.f.m. capacities. They are equipped with railway type brakes and an operator's platform capable of carrying four persons. Motive power is furnished by an air motor with clutch which provides forward and reverse speeds of from 4 to 10 miles per hour. Transverse wheels provide for easy removal from tracks.

Paraffin Base Lubricating Oil

Manufacturer: Gulf Oil Corporation, Pittsburgh, Pennsylvania.

Claims: Combining the advantages of full detergency and the tough film qualities of paraffin base, a new oil for automotive diesel engines and for gasoline engines operating in extra heavy duty service has been developed and is now on the market.

The paraffin base of the oil functions to provide superior lubrication under severest operating conditions, protecting engine parts and improving performance.

The oil's full detergent characteristic, in automotive diesel use, assures cleaner engines, reduces high temperature sludge, piston varnish, lacquer, and stuck rings. Deposits and ring sticking due to oxidation in heavy duty gasoline engines are also avoided by full detergency.

"Kober" Electric Generator

Manufacturer: Kober Electric Company, Arlington, Virginia.

Claims: Now in commercial production, this permanent magnet generator was developed during the war and used successfully by the U. S. Army.

The unit is said to have high efficiency, low weight, great compactness, and freedom from radio interference. In addition, by the elimination of exciters, slip rings, commutators, brushes, etc., maintenance costs are reduced.

According to the manufacturer, the other advantages included in the generator are: absence of exposed electrical connections; improved operation at high altitudes; faster recovery of terminal voltage after removal of overload and short-circuit; output voltage practically independent of temperature.

Shots from the FIRING LINE

Road Building Costs Are 33% Labor, Survey Shows

Wages paid to labor by contractors accounted for close to one-third of the total cost of building the 1,643.435 miles of federal-aid highways completed during the second quarter of 1947, according to the American Road Builders' Association. This labor charge did not include pay of workers in mines, quarries, factories and other sources of material and equipment.

"Total cost of labor for this mileage, according to the report of the Public Roads Administration, was $10,896,892 as against $35,314,369 for the entire quarter's job. Cost of materials came to $9,504,239. It must be remembered, however," the ARBA said, "that other costs to the contractor such as bonding, insurance, social security payments, expense of ownership, operation and maintenance of equipment, transportation, supplies and administrative expenses are not included in the PRA tabulation."

Countrywide Wages Vary

Hourly wage rates for highway labor vary greatly throughout the nine geographic divisions of the United States, the ARBA noted. "In June, the last month of the quarter, the national average was $1.59 per hour for executive, administrative and supervisory jobs, $1.68 for skilled labor, $1.22 for intermediate grade labor, and $.89 for unskilled labor.

"Lowest wages obtained in the South Atlantic, East South Central and West South Central divisions. The highest wages were paid on the Pacific Coast where boss jobs drew $2.20 per hour, skilled labor $1.96, intermediate $1.54 and common labor $1.29.

"In the New England division, men in supervisory capacities drew only 31 cents an hour more than the unskilled labor. In only two of the nine divisions —the Mountain and Pacific—did the executive-administrative-supervisor class receive more than skilled labor; and in the Mountain division, this advantage was only three cents an hour," the report disclosed.

"Skilled labor took the lion's share of the national construction payroll for this quarter, with $4,009,395," said the ARBA. "Unskilled labor's wages amounted to $2,732,502. Intermediate grade labor totalled $2,180,283, while the administrative group's pay came to $1,974,712."

The 1,643.435 miles of highway finished during the quarter included primary and secondary roads and urban streets and the required bridges and culverts. It also included various types of surfaces.

Start Construction of New Philadelphia Subway

Construction work on the extension of the Market St. subway in Philadelphia has been officially started at 33rd and Ludlow Sts., eastern end of the projected subway structure, which will eventually extend to 46th and Market Sts., and which will cost approximately $6,500,000.

Upon completion the new subway will be joined with the already existing tunnel under the Schuykill River. The contract for the subway work, held by the George H. Finn Corp., New York City, calls for construction of a four-track subway, two subway surface lines and express, to a point west of 33rd St. The express tracks ultimately will be continued to 46th St., where they will be carried on the elevated structure to 69th St.

Demolition of the elevated structure east of 46th St. will start when the new subway is available for use.

Cascade Tunnel Uneconomical, Engineering Study Shows

Anticipated revenues from a proposed $20,000,000 tunnel through the Cascade Mountains in the State of Washington would not justify its construction on the basis of present figures, according to a report by the engineering firm of Cloverdale & Colpitts as announced by Gov. Mon C. Wallgren.

Although declaring that "this stymies the thing for the present," Governor Wallgren indicated he had not abandoned the idea of a bore under the mountains in the vicinity of Snoqualmie pass. Such a project had been recommended to the 1947 Washington State Legislature by Ole Singstad, noted tunnel authority, who was employed to survey its feasibility.

Governor Wallgren said he had not had time to study the entire report made by Cloverdale & Colpitts, but that it indicated belief that tourists driving across the state in the summer months would not pay tunnel tolls, as they would prefer to take the more scenic route through the pass. The report also said certain classes of trucks would be barred from using the tunnel.

Two bills providing for the tunnel project were unsuccessfully introduced in the 1947 Washington State Legislature. The first, introduced by executive request, provided for construction of a tunnel 2.3 miles long under Snoqualmie pass. It called for an appropriation of $750,000 to the Washington Toll Bridge Authority to design the tunnel and to proceed with preliminary construction. The second bill called for

(Continued on page 704)

• Views of George A. Fuller Company's (New York City) 14-acre job in Eastchester, N. Y. Excavating for the huge Lord & Taylor department store has been sublet to Frank Bracalello. Left: A Worthington rock drill powered by a Worthington 315 compressor drills rock outcrop for blasting. Below: ¾-yd. Northwest 25 dragline (GM diesel powered), tractors and trucks work in the foundation excavation.

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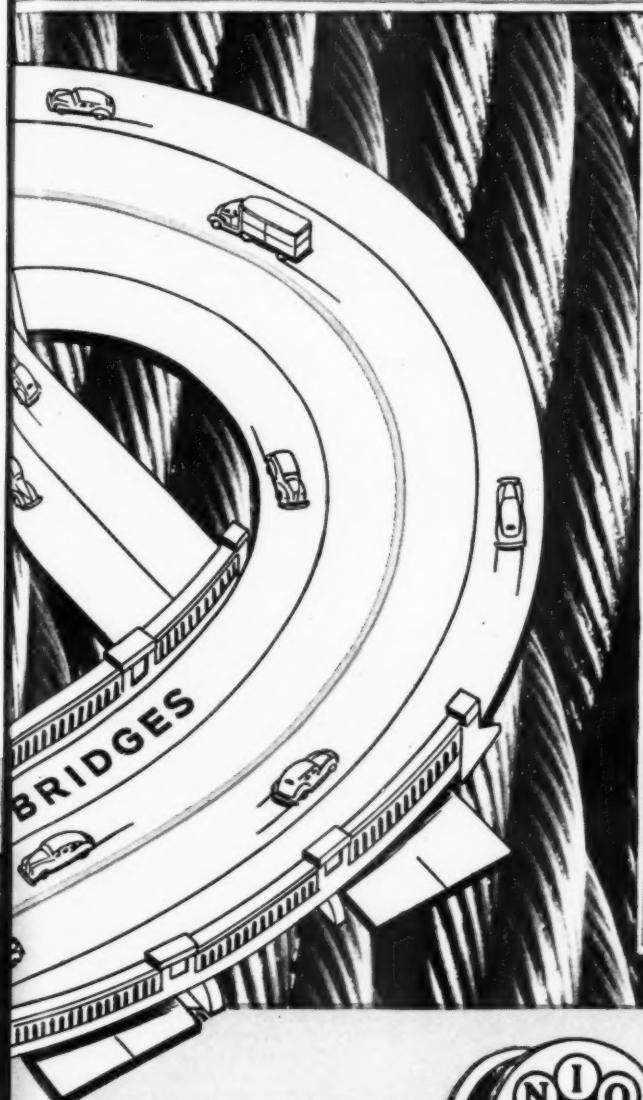
GOOD ROADS ARE CHEAP!

Figured on a per year instead of a per mile basis, good roads will cost nothing because they will pay off in miles, minutes and lives. Time and delay studies show that lost minutes at 1 cent per minute, per car and lost miles at 3 cents per mile, per car will more than pay the yearly cost of modern highways tailored to fit traffic flow and load. Facts from the Public Roads Administration's accurate inventory of highways and traffic indicate that –

AMERICA CANNOT AFFORD TO WAIT UNTIL THERE ARE 100 CENTS IN THE DOLLAR NOR UNTIL THERE IS UNEMPLOYMENT TO BE RELIEVED



MAKE RESERVATION NOW — VISIT WORLD'S FAIR OF CONSTRUCTION MACHINERY

The gigantic jobs of highway, airport, flood control, irrigation and soil conservation construction planned for America could not be accomplished for ten times present costs were it not for the fact that the construction equipment industry has designed, engineered and developed cost-cutting, man-hour-saving machinery far ahead of anything ever before heard of.

It will be there—at Soldier Field, Chicago, July 16-24, 1948, the Road Show — World's Fair of Construction machinery. Spectacularly and colorfully displayed in an arena the size of 30 football fields, you'll see hundreds of mechanical miracles ranging from push-button-jobs up to 200 tons in weight. No construction man can afford to miss it. Everyone in the profession will find the exact cost-cutting equipment needed to handle this responsibility in the tremendous construction projects America must start and finish with greater speed than ever before.

Make your hotel reservation NOW. Write American Road Builders Association, 1319 F. Street, Washington, D. C.

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• 6-in. holes are being put down 38 feet in the Ocala, Florida, quarry of Dixie Lime Products Co. by this Bucyrus-Erie 22-T blast hole drill. Loading in the pit is a Bucyrus-Erie 1-½-yd. shovel.

Shots

(Continued from page 700)

issuance of revenue bonds paying six per cent in any amount necessary to complete the tunnel. Both bills failed of passage.

After the State Legislature rejected the tunnel proposal, Governor Wallgren endeavored to interest private investors in the project and it was at their request that he had a traffic survey made to determine whether it would be financially sound on a toll basis.

The Boss With 25-Mile Hands

By FRANKLIN P. JONES

You could hear the blare of the horn above the rattle and roar of the digging machine. It came from the cab of an Autocar tractor, which, parked with its low-slung, broad-beamed trailer, waited impatiently across the field from the excavation like a fellow who's been expecting his girl any minute for the last hour.

The insistent honking came in regular blasts. Detaching himself from the group at the digging site, young Donald Hickman sprinted toward the Autocar. "All right, all right, I'm coming on horseback," shouted Hickman, a former Army Air Forces engineer.

What happened next would bug out your eyes so you could use them for quoit pegs. For instead of throwing up the hood and looking for a short in the horn circuit, Hickman jumped into the cab of the Autocar—and answered the telephone.

Phone and Horn Coupled

Yes, answered the telephone! The horn was the signal—instead of a bell. "Hello . . . yes . . . yes . . . right away," Hickman barked into the instrument. He was speaking to the boss miles away. Hanging up, Hickman started the Autocar, drove by the digging crew and shouted as he passed: "I've got another job, I'll be back to pick you up by the time you're finished."

This sort of thing is not accomplished with mirrors—but by two-way radio-telephone, office-to-truck communications. That's the way George J. Igel & Company, Inc., a wide-awake Columbus (Ohio) excavating and grading company, get the most efficient use out of their 17 pieces of digging machinery—dragshovels and cranes—and their two Autocar tractors and their trailers. Igel must move their digging equipment frequently because their jobs, mostly house basements and sewers, are finished in one day, on the average.

Superintendents in the field keep the office informed of progress on all jobs by ordinary telephone and radio-telephone. Then the office is able to dispatch the tractor-trailer units by radio, no matter where they are, to pick up the crawler-mounted digging machines as they complete a job and move them immediately to the next work site. Thus no time is lost for either machines or crews.

25-Mile Range

When a dozen or so jobs are in progress at once and many more are waiting to be done the time-saving, and thus the dollar-saving, is enormous. The radio-telephone, furnished, maintained and operated by the telephone company, puts the boss in the driver's seat at every job within the instrument's range of 25 miles from Columbus.

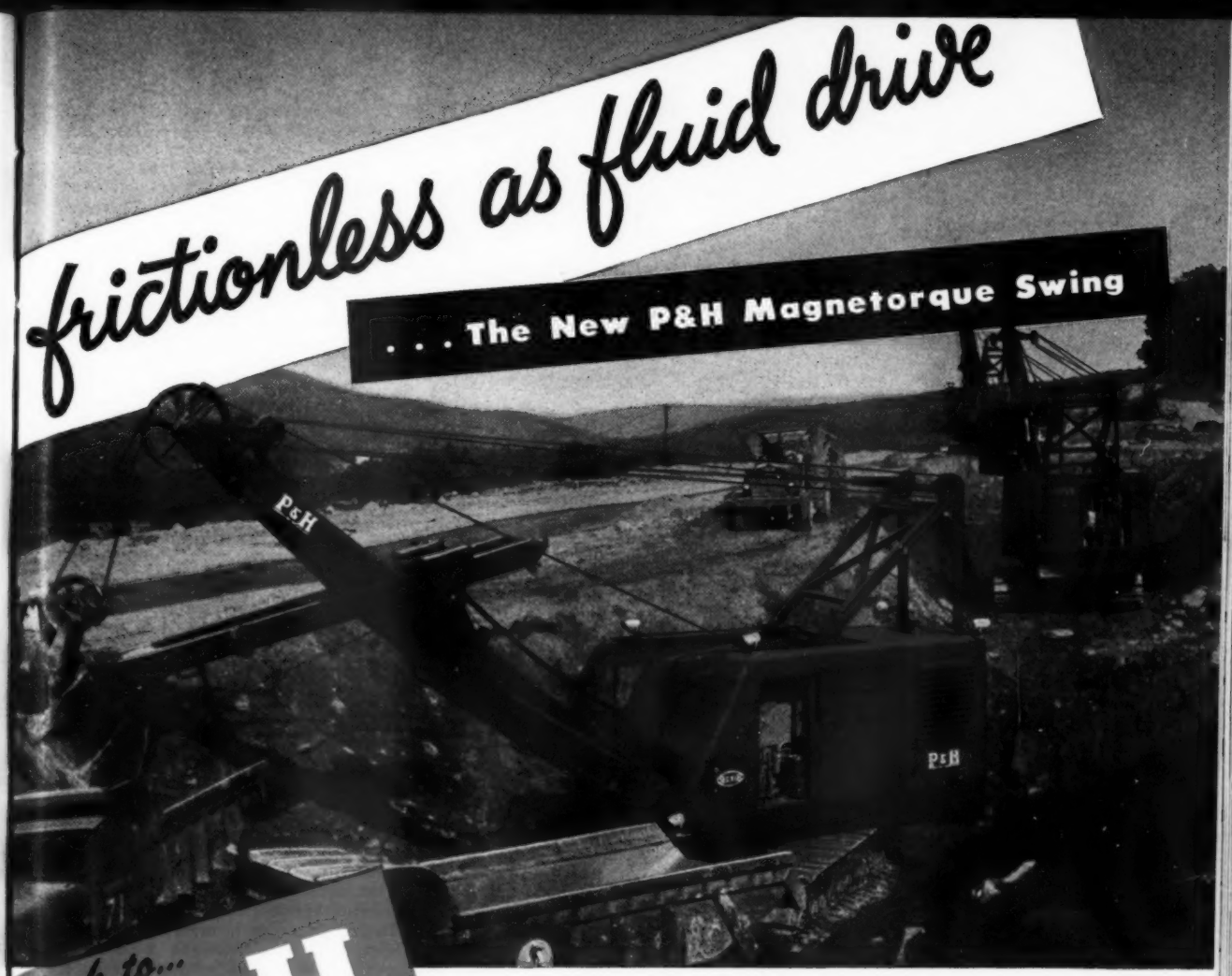
The communications system, said George J. Igel, Jr., has promoted operating efficiency to a surprising degree. "Since our individual jobs are small," he explained, "we could spend as much time moving and waiting as we would in doing the job if we didn't have efficient transportation.

"Frequently it is necessary to cancel orders, to change a tractor-trailer unit's

• With dragshovel in tow behind his Autocar tractor (above), Donald Hickman (left) gets assignment over radio-telephone installed in cab.

frictionless as fluid drive

. . . The New P&H Magnetorque Swing



look to...

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for added values

Wherever you find the P&H Model 1055 on the job, you'll hear owners singing its praises for the new Magnetorque swing which marks the end of swing friction trouble and costly maintenance.

No Friction . . . No Friction Problems

The new Magnetorque solves the problems of old style swing clutches . . . by completely eliminating friction.

Without mechanical linkage . . . without friction . . . without wear — the Magnetorque transmits power for both swing and propel motions — and does it better.

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Because it's smoother, faster, more responsive . . . because it permits quicker, more accurate stops and starts — the Magnetorque swing cuts wasted operating time, increases daily production and lowers yardage costs.

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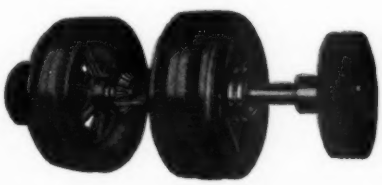
The Magnetorque is built to last the life of the machine. And during this time not so much as a single hour will be required for its repair, replacement, or maintenance.

It's one of the most important improvements in the past twenty-five years . . . users all over the country say so . . . performance has proved it. Write for complete information.



The New P&H Magnetorque Swing

Power for swing and propel transmitted by electro-magnetic forces. Operated by small generator on main engine; controlled from operator's station. Swing motions, slow or fast, have cushioned acceleration and deceleration. Because there is no friction swing, there are no friction problems. One more in the long list of P&H Added Values.

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• Near Aurora, Ontario, Canada, a Northwest 2-yd. shovel loads 16 yards of silty loam into a Goodyear-tired Euclid rear-dump truck on the Toronto-Barrie highway job. Contractor Peacock & McQuigge, Ltd. (Ontario) is building two 22-ft. concrete lanes separated by a 30-ft. mall. Grades are to be held to three per cent.

assignment several times, maybe within minutes. It can be done quickly by radio-telephone. We can shift constantly to meet conditions as they change—without losing valuable time."

The two Autocar tractors, both equipped with the two-way communications, can be depended on, Igel added, to move all the digging equipment and still be available for occasional winch service. The top record for either tractor-trailer unit is eight moves in five hours. And eight moves a day are not unusual.

Mr. Igel explained that the two-way instruments are FM radio sets quite similar to police radios. But they have a selector unit to permit the ringing signal to be received by only one vehicle. Instead of a bell, the horn is tied in and used as the signal where it is necessary at times to call a driver who may be away from the cab.

Like Calling "Long Distance"

The telephone company owns all the equipment, charges a rental fee and about 30 cents a call, Igel said. In placing a call from an ordinary telephone, the operator is given the mobile service number desired, and it goes through much like a long distance call. At the other end, when the truck driver calls in, he signals the operator and she dials the number he wishes.

The service is as flexible as the offspring of a contortionist and the rubber woman. The Igel office can talk to a customer who is on the job site. The field superintendent can order emergency materials from suppliers.

And take the call Driver Donald Hickman recently put through from his Autocar cab. He was miles from nowhere, waiting for his clanking charge in the distance to finish a sewer trench. He whistled apprehensively while the connection was being made. Then—"Hello, dear," he cried with forced gaiety. "Look, dear, we'll be working late. Better not count on me for dinner." It was Mrs. Hickman, of course. And she had a few things to say! So this is modern two-way communication?

"There's plenty of room for improvement," murmured Hickman as he stalked off toward the digging crew. "It would be twice as good sometime if it were only one-way."

"Singing Lane" Separators on New N. J. Highway

New Jersey's state highway department has now constructed a "singing" lane separator to alert night-time drivers when they are "off the beam." This latest contribution in the department's campaign for greater safety in travel, State Highway Commissioner Spencer Miller, Jr., explained, is on the newly completed section of Route 6 in Totowa, Passaic County, to the junction with Route 23 in Wayne Township.

The audible warning or "hum," he explained, results from the suction of tires when they are run over the separators which have a scored surface—slight elevations and depressions.

To provide traffic relief the new Route 6 link has sections of six lanes—three for east and three for westbound traffic. To mark the lanes are separator strips of white cement. They are flat with the surface of the road and are 24 inches wide. When a driver lets his car veer off the smooth lane the resulting hum warns him to get his bearings.

The device is expected to be of special aid in times of fog or low visibility in rain storms.

Highway engineers are now toying with the idea to have the scoring or depressions so spaced that they will sing out "Get Over. Get Over."

Reclamation Bureau Needs Technicians for New Program

The Bureau of Reclamation has hung out a "Help Wanted" sign. Several hundred engineers and scientists are needed at once in western field offices and on projects to bring design and construction forces to strength needed to fulfill the construction program.

Principal need is in the Missouri River Basin States, where the Bureau of Reclamation has Congressional mandates to start construction of 10 new dams this fiscal year. In addition, recent decentralization of various engineering services formerly performed at Denver, in order to meet Congressional directives, has brought a need for qualified personnel willing to man the 25 field design offices which are being established.

Openings for civil, mechanical, and

• The North Carolina highway department is currently absorbing most of the 150 to 170-tons of limestone produced per day by this G-M-diesel-powered Pioneer portable crushing plant. The unit consists of a 36 x 20-in. jaw crusher with a 40 x 20-in. roll crusher and a three-deck 4 x 10 vibrating screen in the secondary. An elevator from the secondary carries the finished product to the 20-yd. truck loading bin. Owner E. C. Burleson, Asheville, N. C., frequently moves the plant to cut down truck hauls—his well-trained 15-man crew has in some instances been able to start production within two days after arrival on a new site. The photo was taken near Caudler, N. C.

electrical design and construction engineers, and soil and irrigation scientists, range from the P-4 Civil Service classification, with a starting salary of $4,902 per year, to P-1 with a starting salary of $2,644 per year. There are many openings for surveymen, engineering aides, agricultural aides, draftsmen, and related occupations, with salaries ranging from $1,690 to $3,397 a year.

For 17 Western States

All positions are in the 17 Western States and inquiries should be addressed either to the Regional Director, Bureau of Reclamation, Billings, Montana, or the Regional Director, Bureau of Reclamation, Denver, Colorado.

Application forms, Federal Employment Form No. 57, may be obtained at any first or second class post office, or from the Bureau's regional offices.

New employees for the most part will be working directly with the program known as the Missouri Basin Project, and appointments will be on a temporary basis except where persons are authorized to transfer or reinstatement based on present or previous Federal service. However, persons holding temporary appointments will, in general, have opportunity to compete for career appointments at a later date. Qualified veterans will be given preference. Examinations will be announced periodically by the Civil Service Commission.

A few appointments will be available in the far West and Southwest, and inquiry for positions there may be made to the Regional Director, Bureau of Reclamation, Amarillo, Texas; Boulder City, Nevada; or Sacramento, Calif.

The Missouri Basin Project, where the bulk of the openings are, will provide employment largely in Billings, Montana; Bismark, North Dakota; Pierre, South Dakota; Great Falls and Miles City, Montana; Heart Mountain and Casper, Wyoming; Denver, Grand Junction and Estes Park, Colorado; and Indianola, Nebraska.

R. I. Firm Starts Job of Untangling Boston Traffic

A Providence, R. I., engineering firm has been engaged on a $107,000 contract by the Massachusetts Governor's Joint Planning Board to draft a master highway plan aimed at solving the traffic tangle in Boston metropolitan area. Associate State Public Works Commissioner George C. Hyland, announced that the firm, Charles A. Maguire Associates, Inc., will report its findings by Dec. 1.

Hyland said its recommendations would probably involve total construction costs of $150,000,000. In the survey, half the cost of which is paid by the Federal Public Roads Administration, the long-standing bridge-or-tunnel controversy at East Boston should be settled entirely on its merits, he declared.

Maguire Associates will work with

3½ to 62 Continuous

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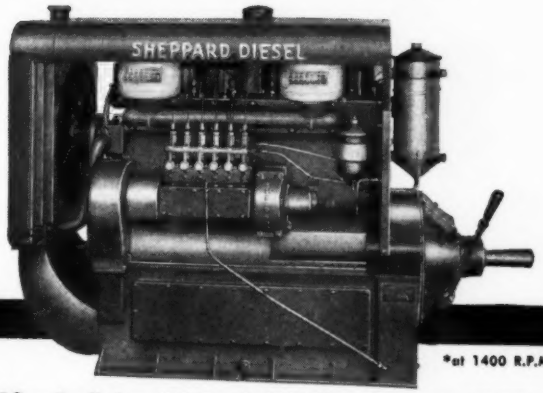
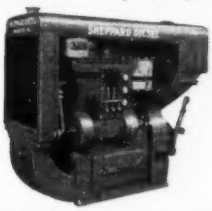
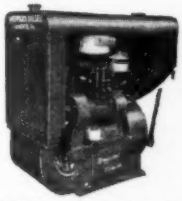


*at 1400 R.P.M.

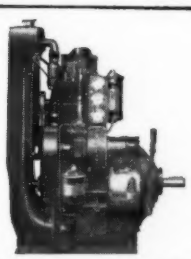
Model 12 – 6 cylinders, 50 H.P. Model 12D – 6 cylinders, 62 H.P.*



Model 6A-1 – 3 cylinders, 25 H.P.
Model 6D – 3 cylinders, 28 H.P.



Model 13 – 2 cylinders, 16 H.P.
Model 13D – 2 cylinders, 18 H.P.



Model 7 – 1 cylinder, 8 H.P.
Model 7D – 1 cylinder, 9 H.P.

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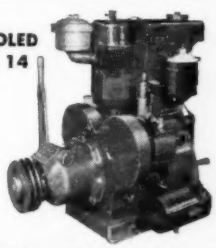

1 cylinder, 3½ H.P. at 1800 R.P.M.
Smallest Diesel built.

Sheppard Diesels are built and *rated* for rugged, *continuous* operation over long periods at 1200 R.P.M. They are of full-diesel design . . . starting and operating on low-cost domestic fuel oil. Standard equipment includes electric starting, power take-off and clutch. Write for complete specifications on the Sheppard Diesel that best suits your power requirements.

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Sheppard DIESELS

the governor's traffic committee and will use information compiled in a three-year origin-and-destination study covering Boston and some 30 suburban communities.

Origin Destination

The engineering firm's report also will deal with the priority which should be given to necessary highway projects. It will make the final analysis of the origin-destination survey, designed to show where the most people go and how often, through the metropolitan area.

It was explained that the Dec. 1 deadline was set because Governor Bradford wanted a preliminary report by that time. The final report, Hyland said, will be submitted by next Feb. 1. The firm will also collaborate with the traffic survey groups of J. E. Greiner Co., Baltimore, and DeLeuw-Cather Co., of Chicago.

Meanwhile, testimony on various proposals to relieve Boston traffic congestion is being heard by a special state legislative commission on traffic, housing, lighting and recreation in Boston.

Reclamation's J. C. Page Retires

After 36 years of western reclamation service, John C. Page, 60, engineer and one-time Commissioner of Reclamation, retired from the Federal service on October 31. Mr. Page indicated that he would serve when called upon as consultant. Since August 1943, he has been a full-time consulting engineer at Denver, and has worked in part on completion of the Colorado River Basin Report and on preliminary studies of the Central Arizona Project.

He served as Commissioner of Reclamation from January 1937 until June 1943, when he resigned upon advice of his physician because of ill health. After a rest, he resumed active duty as consulting engineer.

"The service Mr. Page has given to Reclamation has been marked by a deep love of the West and conscientious interest in development and reclamation of land and water resources there," according to Reclamation Commissioner M. W. Straus. "His career, which took Mr. Page from surveyman to Commissioner, coincides with all but the first nine years of the history of Federal reclamation. He has grown with the Bureau of Reclamation, and has contributed in a conspicuous way to the development of our western resources. I am happy that we will not completely lose his experience and knowledge by his retirement from active service."

Directed Many Projects

During his term as Commissioner, the Bureau of Reclamation was engaged in a large construction and development program which added thousands of acres to irrigated farm lands and witnessed the construction of some of the largest reclamation hydroelectric power plants. Among important construction was Grand Coulee Dam in the Columbia Basin, which during the war was a fundamental factor in the Pacific Northwest's war production, the completion of Imperial and Parker Dams on the Colorado River, the Bartlett Dam in Arizona, the Seminoe and Alcova Dams in Wyoming, Alamogordo and Caballo Dams in New Mexico, and Marshall Ford Dam in Texas. Studies which ultimately led to Congressional authorization of the Missouri Basin Project were started.

• This Bucyrus-Erie-Bullgrader-equipped International TD-14 tractor and another like it spread 18 cars of open-hearth slag each day for W. E. Plechaty, Cleveland, Ohio. The 3,200-lb./cu. yd. material, still hot when unloaded, is being placed as fill on a building site.

Survey Suggests State Care for all Ky. Rural Roads

A suggestion that the state government assume the responsibility for the administration and maintenance of all Kentucky's rural roads is being considered by Kentucky highway department officials and representatives of highway user groups.

The move was proposed in a Kentucky highway survey completed by the Public Administration Service at the request of the highway department. Charles Redfield, PAS spokesman, said the survey disclosed that the counties as a whole "are not in the position to perform the type of road work required to maintain the rural highway system."

Redfield said 48,000 miles of state roads are administered by the state's 120 counties with the aid of a rural highway program. An additional 10,000 miles are classified as state roads and 3,000 miles are maintained by the cities. The PAS survey indicated the need of a revised program of highway finance but made no specific recommendations. However, Redfield pointed out the state leans "heavily" on its federal aid program from which it receives approximately $9,000,000 a year.

Plan Termed "Revolutionary"

State Highway Commissioner J. Stephen Watkins termed the proposed state-administration of county roads "revolutionary" but added it had been done with varying degrees of success in Virginia and North Carolina. "It is a certainty that rural roads in Kentucky must have more money,"

The Commissioner said the PAS survey would be put into final form by next week and would be ready for distribution to members of the General Assembly, county officials and other interested persons. Representatives of state auomobile clubs, the Kentucky Farm Bureau Federation, road material dealers organizations, the Kentucky Motor Transport Association and the Rural Letter Carriers Association participated in a discussion of the survey.

Commissioner Watkins appointed a seven-member committee to collaborate with the Highway Department in the formulation of a long-range highway program. Named were C. W. Lovell, Louisville, Chairman; R. H. Proctor, Louisville; Eugene Stuart, Louisville; W. O. Snyder, Frankfort; Carl Wachs, Lexington; H. P. Minch, Owenton, and Herb Clay, Louisville.

Reface Dike at Kansas City

by Rad Nelson

Inroads which Kaw river flood waters have made recently in the dike at Kansas City, Kansas, have been repaired with a fill of 12,000 tons of rock and 3,600 cubic yards of dirt. The George

• Mud to smooth the 35-ft. dike face is fished out of the Kaw river at Kansas City, Mo., by George Bennett Construction Company's ¾-yd. Lorain dragline.

Bennett Construction Co. did the work under the supervision of the Kaw Valley Drainage Board. Using a ¾-cu. yd. Thew Lorain dragline with perforated bucket, and a D8 Caterpillar bulldozer, workmen have completed the job of resurfacing the 35-ft. high levee which flanks the east bank of the rampageous river for 1400 feet northward from the old Southern bridge near Eighteenth street and Argentine boulevard.

Dirt hauled in and dumped on the sloping side of the dike was first graded, and rock was then truck hauled to the site and rolled down the river side of the embankment to form a pile about 10 feet high at the toe of the dike. The bulldozer and dragline were put to work smoothing the rock into a new face, from the low water mark upward to the hand-placed stone work which caps the levee.

"The new dike face should withstand the river's sweep at this point for several decades," reports Truman Schlup, engineer for the drainage board, overseeing the project. "Of course, you never know what this river will do. And you couldn't do much about it if you did. To keep it within this dike you just have to pet it along and make allowances for where it wants to go."

J. K. Price is general superintendent for the Bennett firm.

Highway Heads Ask $500 Million a Year Federal Aid

A resolution petitioning Congress to authorize not less than $500,000,000 for each of the fiscal years of 1949, 1950 and 1951 for federal aid highway construction was adopted by the American Association of State Highway Officials at the closing sesion of its 33rd annual meeting, in New York.

Asserting that the Federal Highway Act of 1944, providing $500,000,000 for each of the years 1946, 1947 and 1948, has enabled states to plan intelligently a continuing program of highway improvement and has resulted in most efficient use of the funds, the association declared that similar funds for the future are needed "so that the orderly continuation of the highway program can advance uninterruptedly and expeditiously."

Other resolutions called for uniform state speed and weight laws, for a ban against construction of airports or landing fields within 65 feet of a public highway, for increased appropriation of federal funds for forest highways, for establishment of the Transportation Corps as a regular unit of the Army, for long-range planning on road projects by all states, and for a retirement plan for state employes.

R. H. Baldock Chosen as President

Robert H. Baldock, chief engineer of the Oregon State Highway Department, who was elected president of the association to succeed Tennessee State Highway Commissioner C. W. Phillips, warned that there are a million miles of highways in the United States in such a state of deterioration that they comprise a constant menace to motorists.

"The expenditure of $30,000,000,000

THE RIGHT BUCKET IS RIGHT HERE!

You can't go wrong! Exactly the bucket you need is shown in picture and with complete data—in Blaw-Knox Catalog No. 2076.

Here you have the most convenient clamshell bucket catalog ever published—now it is easy to select a bucket for any kind of rehandling, digging or dredging.

Hundreds of buckets to pick from—your job, your equipment, and your conditions can be exactly met—and you will get a bucket which really performs.

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Get Catalog No. 2076—for your library or files—it's yours for the asking.

BLAW-KNOX CLAMSHELL BUCKETS

• A neat cleanup job was this operation of Roy Strom Excavating Company at one of Chicago's Soldier Field parking lots. The problem was to clear an 8-in. layer—totalling 1000 cu. yds.—of dirt which had been laid on the black top for the Ringling Brothers, Barnum and Bailey Circus. Further, the dirt had to be moved out immediately after the circus closed in order to make the lot available for Soldier Field crowds. Strom did the job in one 8-hr. day (and without injury to the blacktop surface) with this Caterpillar 12 motor grader and Athey force-feed loader. The grader laid out dirt and debris in long windrows for the loader, which was then able to handle it faster than seven trucks could haul to the dump, 1½ miles away.

over a period of 10 years will be required to provide adequate transportation routes throughout the country," Baldock said. "People are becoming more and more impatient for better roads and our systems are about 15 years behind the proper standards of restoration of depreciation."

Baldock pointed out that roadbuilding should advance far more in 1948 than it has during the current year as there is a lessening in the shortage of manpower and materials. Many safety devices will be built into the highways, he said, and construction will be designed to fit the vehicles and assist drivers.

"Great Tidal Movements"

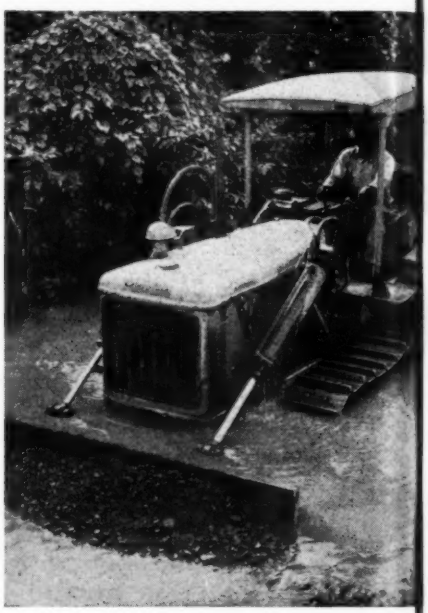
In addressing one of the earlier sessions of the association's week-long conclave, Federal Public Roads Commissioner Thomas H. MacDonald said that plans have ben approved for 10,-210 miles of highway construction in this country involving $278,000,000 of federal funds, and 90 per cent of this work is under contract. Improvements on the secondary system have been programmed on 32,000 miles, he added.

"In the urban areas, particularly," MacDonald said, "the daily reciprocal movement from home to work and work to home is the most prominent feature of highway traffic. It is for the more efficient conveyance of these great tidal movements that the various degrees of arterial street improvement are proposed and required."

Senator John S. Cooper of Kentucky, chairman of the subcommittee on roads of the Senate Committee on Public Works, urged that the next session of Congress extend the Federal Highway Act of 1944 for at least another three years beyond its scheduled termination in 1950. He also advocated continuation of the Defense Highway Act of 1941 to assure a network of strategic roads ready for an emergency.

"It is very necessary," Senator Cooper declared, "that the next session of Congress adopt an affirmative position rather than one of more negative criticism toward the Inter-American Highway, the Alaska Highway and roads within and leading to Alaska, as necessary elements of our national security.

"Agreements should be reached between the governments of the United States and Canada for the provision of suitable connecting roads between the United States and the southern terminus of the Alaska Highway, and for the proper maintenance of the Alaska Highway itself."



• Collecting river gravel for aggregate for a private housing project in Puerto Rico is this Caterpillar D6 tractor with La Plant-Choate bulldozer. The unit is owned by Rafael Bermudes.

• International TD-14 tractor with Bucyrus-Erie Bullgrader banks pine logs for Ponderosa Wood Products Co. in the camp near Dyke, Colo. The machine is also used to open new roads for logging operations.

N. Y. Gov. Dewey Speaks

A proposed $2,000,000,000 highway construction program in New York State was endorsed by Gov. Thomas E. Dewey, who asserted that unless construction was maintained our economy would become a "shrinking and dying thing." He said he didn't know where the funds for such a program would come from, "but I do know it is our solemn duty to rebuild the highways."

"A serious threat to the progress of this country exists in those demagogues who would concentrate public funds on new governmental ventures, leaving

• Galion motor grader with International UD-14 power unit is shown at work on a new road leading to the York Building Company's 18-acre, 70-unit prefabricated housing project on the northern boundary of Raleigh, N. C. The grader is owned by the City of Raleigh.

fundamentals of our transportation system to starve and wither away," Dewey declared, emphasizing the highway construction and reconstruction was needed for both safety and economic reasons."

New York State Public Works Superintendent Charles H. Sells pointed out that labor has the largest interest in an adequate road construction program. Out of every dollar spent on road construction, he said, 85 cents goes directly or indirectly to the workers, while the improvement and extension of highways not only means job security in many industrial and commercial endeavors, but also more jobs.

During a panel discussion on highway department public relations, Kenneth Perry, general counsel of Johnson & Johnson, New Brunswick, N. J., declared that the business community and all other segments of the public stand ready to support any reasonable program of highway development. It is the job of highway department administrators to tell the public in concise terms the necessity of improvements, where the arteries for relief of congestion will be located and suggested methods of financing, Perry said.

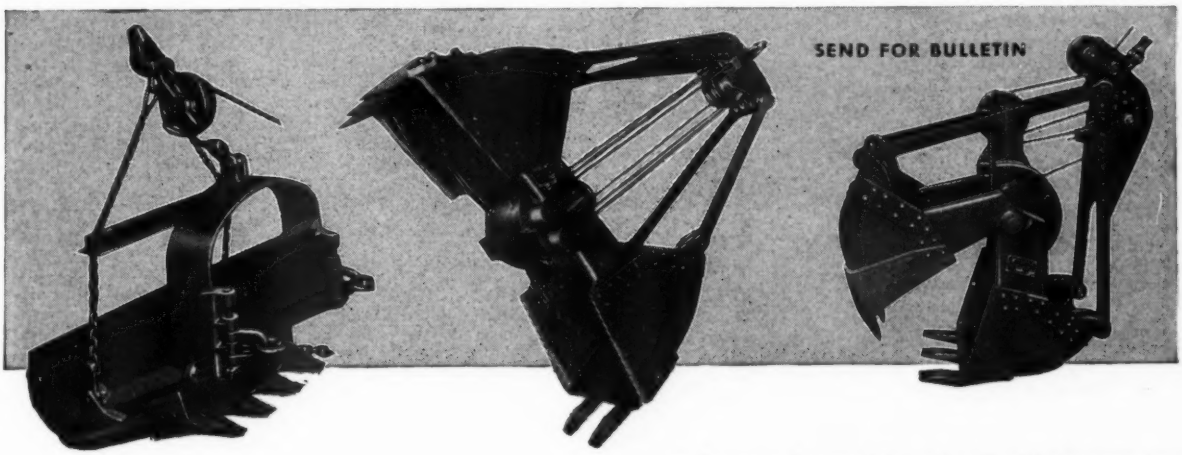
Pointing to the ease with which highway officials convinced the people of New Jersey of the necessity of Route 4, the state's first parkway, and Route 100, its first freeway, Perry declared the only questions raised have been why the improvements were not started sooner and when they will be ready for use.

Perry asserted, however, that "businessmen want to pay for roads once and not several times." He said it was his opinion that road developments should be on a self-liquidating basis either through tolls or taxes imposed on highway users. He contended bond issues should not be floated that would impose on all taxpayers the cost of improvements.

"Urban Congestion to Increase"

A prediction that congestion in urban areas will continue to grow worse was made by Norman D. Shidel, editor of the **Journal** of the Society of Automotive Engineers. Within 20 years mileage traveled by American motorists may go 50 per cent above today's levels, and highways must accommodate that increased mileage, he said.

Herbert S. Fairbank, deputy com-



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Williams Type **BUCKETS**

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missioner of the U. S. Public Roads Administration, said highway departments should conduct continuing traffic surveys to keep the people informed of the need for improvements. By enlisting the support of producers of road materials, the contractors and the public, he said, "we can go ahead with a mutuality of intention."

Charles S. Purcell, chairman of the California Department of Public Works, Division of Highways, credited an impartial survey of his state's highway needs by the Automotive Safety Foundation with winning public support for a program that this year increased gasoline taxes and motor vehicle fees by $75,000,000 a year. "You must show conclusively," he said, "that you need additional financing, that you can spend it, and that you can accomplish something with it."

Other Officers Elected

Besides the new president, other officers of the association were named as follows: First vice president, Wesley W. Polk, chief highway engineer, division of highways, Illinois Department of Public Works and Buildings; treasurer, George S. Henderson, principal highway engineer, Rhode Island Department of Public Works, division of roads and bridges; and regional vice presidents, New Jersey Highway Commissioner Spencer Miller, Jr.; F. Elgin Bayless, chairman of the Florida State Road Department; Wardner G. Scott, state engineer, Nebraska Department of Roads and Irrigation; and A. F. Winkler, chairman of the Montana Highway Department.

James A. Anderson, chairman of the Virginia State Highway Department, and C. H. Purcell, director of public works in the California Division of Highways, were named new members of the executive committee.

More than a thousand delegates from the United States, Canada and Australia attended the conference.

Texas Group Points to Serious Crowding of Roads

Color movies and a collection of charts and maps will tell the story of Texas roads at the State Fair of Texas at Dallas. Col. Ike Ashburn, executive vice president of the Texas Good Roads Association has announced that the organization will sponsor an exhibit in the fair's Agriculture Building.

"Most engineers say that 3,000 vehicles per day is the maximum efficient volume for a two-lane highway," Ashburn declared. He added: "Texas now has 400 miles of two-lane highways carrying more than 4,000 vehicles per day. If current trends continue, 1,050 miles of Texas roads will be overcrowded by 1955."

Increased road use will demand continuous expansion in all classes of roads, Ashburn stated. "Texas people must prepare to meet this problem courageously," he said. "The continuation of a balanced road program to develop all classes of highways must be assured for the future of Texas. The Texas Goods Roads Association is unequivocally committed to such a program."

Florida Considers $36 Million New Highway System

Chairman Elgin Bayless of the Florida State Road Department was empowered by the State Traffic Commission to conduct a survey of Duval County to show the financial soundness of a proposed $36,000,000 superhighway system. Such a survey was said to be a necessary step prior to issuance of bonds to finance the project. The bonds would be retired by tolls on bridges in the project.

The commission also asked the State Road Department to consider drafting plans for the proposed Arlington Bridge, one of the links in the superhighway, rather than pay the estimated $350,000 cost of having the specifications privately prepared. It was recommended that a consulting engineer be called in to assist department engineers in this work.

Besides the Arlington Bridge, the proposed superhighway will include new spans across Trout River north of Jacksonville and over the St. Johns River between Riverside and Southside. The cost of erecting the bridges and

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You know the kind . . . that job on which you've never been able to get production up where you'd like it . . . the one that's been "raising Ned" with your present equipment! That's the kind of a job where a GENERAL really stands out!

You've got a job like that . . . where operating conditions are especially bad . . . where usage is exceptionally severe. The record proves that GENERALS can take punishment, day after day, and still turn in a creditable performance: 98% OF ALL THE GENERAL MACHINES EVER BUILT ARE STILL IN SERVICE! That's a record worth thinking about in planning the purchase of new equipment. It's a record that proves a GENERAL can handle your job—faster, better, cheaper. See your nearest distributor or write to us direct today for the complete details . . . you'll find them both interesting and helpful.

POWER SHOVELS • CRANES • DRAGLINES • CLAMSHELLS • BACKHOES • PILE DRIVERS

THE OSGOOD CO. O-G THE GENERAL CO. EXCAVATOR

MARION OHIO

DIESEL GASOLINE OR ELECTRIC POWERED • ⅜ TO 2½ CU. YD. • CRAWLERS & MOBILCRANES

• A 26-ft. tug is launched in the Savannah River, 22 miles above Augusta, Ga., by this Bucyrus-Erie E-2 dragline with 55-ft. boom. The rig is ordinarily engaged in dredging operations at Clark Hill Dam for Atlantic Dredging and Construction Co., Okeechobee, Fla.

the connecting links of the superhighway would be raised by State Improvement Commission bond issues, with the bonds retired from tolls on the new bridges.

Materials Handling Show in Cleveland, January 12-16

The National Materials Handling Exposition will be conducted for the second year in the Public Auditorium, Cleveland, O., Jan. 12-16, inclusive, it was announced recently by Edwin J. Heimer, president of Barrett-Cravens Co., Chicago, and chairman of the exposition committee.

One hundred and fifty-four exhibitors, 60 per cent more than the number represented at the first show already have contracted for booth space. The exposition, which attracted more than 12,000 top management executives last January, will occupy almost 200,000 square feet of exhibit space, nearly three times the previous area, and thus will rank among the top fifteen national industrial expositions, Heimer said.

The show will run for five days, instead of four, and all systems of materials handling will be on exhibition to make the showing completely representative, he added.

Educational features will include a Conference on Materials Handling, which will be held concurrently with the exposition; a Materials Handling Theatre, which will present films on handling subjects, and an institutional presentation of materials handling equipment and systems in addition to those shown in the commercial exhibits.

Virtually all booths will be larger in area to permit demonstration of equipment in motion. Increases range from two to five times previous areas used. To accommodate the larger booth dimensions, the exposition has been moved to the Lakeside exposition halls of the Auditorium.

A. G. C. Boards Urge Greater Efficiency, Emergency Training

Means for attaining greater efficiency under current upset conditions, for increasing the volume of construction, for operating under the Taft-Hartley Act, and for cooperating with the Corps of Engineers to organize and train reserve construction units for emergency military use, were explored at the fall meeting of the Governing and Advisory Boards, The Associated General Contractors of America.

At the meeting, which was held in Des Moines, Iowa, Representative Paul Cunningham (R. Iowa), chairman of the Roads Subcommittee of the House Public Works Committee, made public announcement of the bill which he intends to introduce for a continuing federal aid highway program.

Dwight W. Winkelman, president, D. W. Winkelman Co., Syracuse, N. Y., was nominated by the boards for president in 1948, to succeed F. W. Parrott, president, C. F. Lytle Co., Sioux City, Iowa. Adolph Teichert, Jr., president, A. Teichert & Son, Inc., Sacramento, California, was nominated as vice president of the association to succeed Mr. Winkelman.

"No Drastic Cost Reductions"

President Parrott, in his opening statement, reviewed actions of the association, discussed the conditions facing the industry, and stated in part:

"One of our first duties as an industry is to inform the public that it should not believe that there can or will be quick or drastic reductions in construction costs. Because construction is so important to development of the nation, it is essential that it be carried out as efficiently, as economically, and as rapidly as possible.

"Our job as contractors is to do all within our power to see that construction is carried out in this manner. The entire construction needs of the nation cannot be filled immediately. But we should give encouragement to the construction now of those projects which are most essential. Now is the time to go ahead with essential projects."

Costs Increase Slightly

Costs of heavy engineering construction were remaining steady in many areas, while costs of industrial and commercial building construction and

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HAISS
HI-POWER
For Catalogs, Prices, Deliveries Write or Wire
GEORGE HAISS MFG. CO., INC., 144th Street & Park Ave., New York 51, N. Y.

• In order to provide year-round pasturage for cattle, this International TD-14 tractor with Bucyrus-Erie Bullgrader is building open water storage reservoirs on the Esperanza ranch below San Antonio, Texas. Water, supplied to the reservoir from a newly-drilled free-flowing deep well, is used to irrigate cleared and grassed pasture lands during dry seasons.

highway construction were continuing a slight upward trend, according to results of a telegraphic survey of the association's chapters and directors.

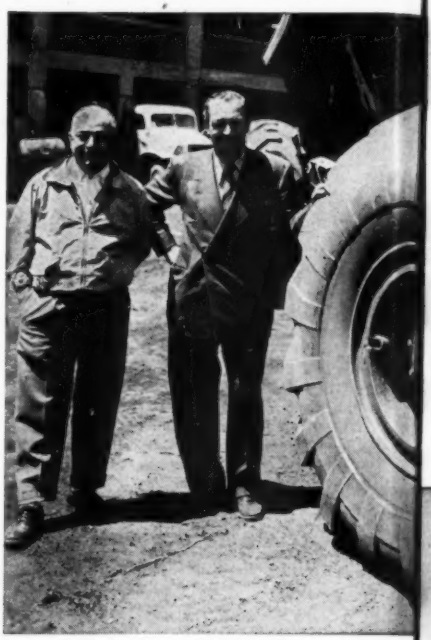
Significant facts in the survey, which introduced discussion on cost and market trends, were developed through replies as follows:

Construction costs — slight upward trend reported by 83 per cent for building; 82 per cent for highway; 50 per cent for heavy construction. Principal reasons for slightly higher costs were higher materials prices, wage increases, low labor productivity.

Work coming on market—increases reported by 50 per cent for building; 55 per cent for highway; 70 per cent for heavy construction. Reasons noted were need for schools, hospitals, highways, power plant, sewer, water and heavy industrial construction, and realization by owners that construction costs are not out of line and are not likely to decrease drastically.

Materials—shortages reported by 83 per cent for building; 55 per cent for hghway; 30 per cent for heavy constructon; Reasons cited were slow deliveries, lack of freight cars, dealer reluctance to replenish own stocks. Shortages noted principally in structural, fabricated and reinforcing steel; lumber and millwork; iron and clay pipe.

Equipment—shortages reported by 17 per cent for building; 55 per cent for highway; 50 per cent for heavy construction; Shortages cited were cranes, shovels, tractors, compressors, scrapers, replacement parts. Reasons cited were slow deliveries and dealer reluctance to give reasonable trade-in allowances.



• The Augustine brothers, Andy (left) and S. J., have a $10 million contract for leveling, draining and grading a 150-acre addition to the Philadelphia Southwest Airport. Included in the expansion program are a new terminal tower, three hangars and the extension of two runways.

Labor — shortages reported by 100 per cent for building; 36 per cent for highway; 40 per cent for heavy construction. Shortages cited for bricklayers, lathers, plasterers, carpenters, plumbers, electricians, iron workers, skilled highway and heavy construction workers.

State Eight Points

At conclusion of the meeting, the boards again warned the public not to expect quick or drastic reductions in construction costs, recognized contractors' responsibility to bring about maximum efficiency, economy and speed in construction, and stated eight points for which they should continue to strive.

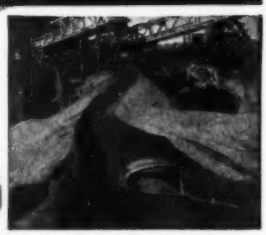
Steps for association members to continue included:

When customary and to fullest ex-

DIG-HAUL-DUMP

Sauerman Scraper stockpiles surplus output of screening plant; later reclaims to cars.

for a FEW PENNIES a yard!



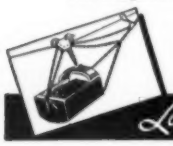
Cement mill uses Sauerman Cableway to move clay from pit to car-loading hopper.

SOLVES YOUR LONG RANGE HANDLING PROBLEMS

In moving material from pits, ponds, banks and stockpiles, it pays to use a machine that combines digging, hauling and dumping in a continuous automatic cycle, controlled by one operator.

Use a Sauerman Power Scraper if the material lies in a dry pit, bank or stockpile. Use a Sauerman Slackline Cableway if the material is under water. With either machine you are assured rapid handling at low cost.

For complete information write for Scraper Catalog 19-A and Cableway Catalog 19-C.



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Long Range Material Handling Machines

tent possible, give and demand firm prices.

Encourage greater productivity and efficiency of workmen; maintenance of wage rates for agreed upon periods of time; elimination of wasteful practices; settlement of jurisdictional disputes without work stoppages; training of apprentices.

Encourage efficiency of management. Encourage spirit of pride of workmanship by labor and management.

Discourage owners from demanding speeds which require uneconomical operations, and encourage allowance in completion dates for unavoidable delays.

Cooperate with design professions to conserve scarce materials and eliminate uneconomical practices and specifications. Encourage adequate competition, and continue to work with other segments of the industry for improved business conditions.

The boards unanimously adopted a motion to give wholehearted cooperation to a plan for organizing and training construction units for military service under the War Department's program which was described as a "marriage between the army and civilian industry."

Colonel Robert J. Fleming, Corps of Engineers, U. S. Army, outlined the program by which the A.G.C. and its chapters and branches were officially requested to sponsor and help train at least 100 Army reserve units which could be mobilized immediately when a national emergency was declared by the President or Congress.

Hal C. Dyer, Dallas, Texas, extended a cordial welcome to all A.G.C. members to attend the 29th annual convention which will be held in Dallas, February 9-12, 1948. Mr. Dyer is chairman of the Dallas Convention Committee.

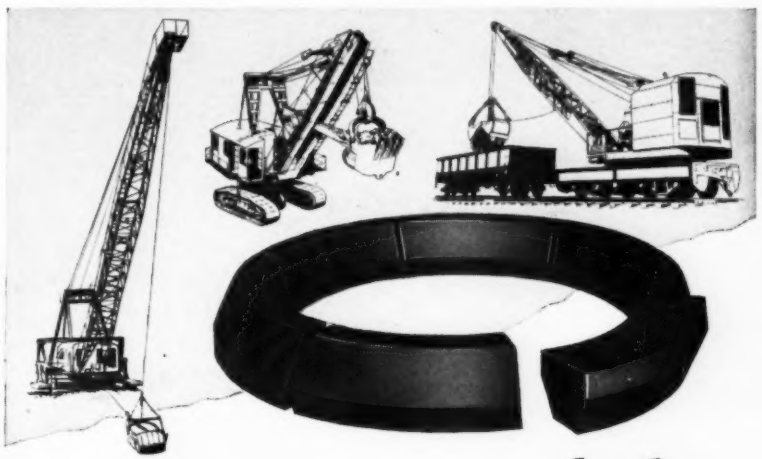
Aerial Survey for Turnpike

A contract for aerial survey of the eastern extension of the Pennsylvania Turnpike has been awarded to Aero Service Corporation of Philadelphia by Gannett Fleming Corddry & Carpenter, Inc., contract designing engineers for the Turnpike Commission. This survey which is to be one mile wide, will be 141 miles long and covers one of the proposed routes of the 4-lane toll road.

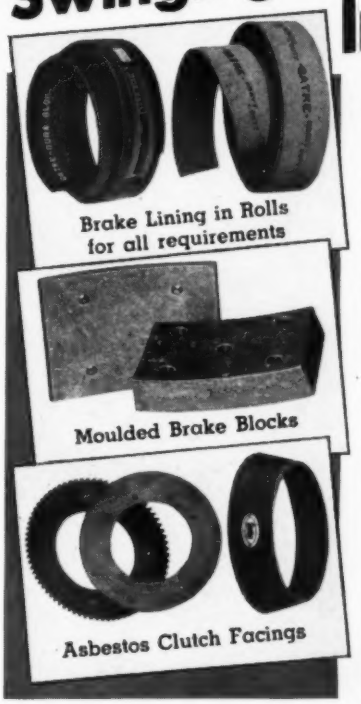
The topographic map will be on a scale of 1 inch equals 200 feet, with 5 foot contour intervals. This is one of the largest highway aerial topographic surveys ever given out by other than Federal Government authority.

Consideration is being given to making the new section of the road similar to the existing Toll Turnpike. The maximum grade will probably be not over 2%.

• Bucyrus-Erie 29-T blast-hole drill moves forward, on Orr & Orr Construction Company's U. S. 70 job. The project involves blasting 3.3 miles of highway through the mountains between Miami and Superior, Arizona.



Swinging Frictions that Increase Output



What a difference GATKE Swing Frictions make! Tremendous Power with smooth, easy handling speeds operation and gets the job done in recod time. Incredibly long wear life with fewer adjustments avoids delays and cuts upkeep costs.

You can easily get GATKE Moulded Frictions and GATKE Prescribed Brake Materials, enginered for your requirements. *Once you have the GATKE Prescription, you order by number.* Popular shapes and sizes are carried in stock for prompt shipment.

GET THE FACTS. *Send application details for the GATKE PRESCRIPTION* or write for literature.

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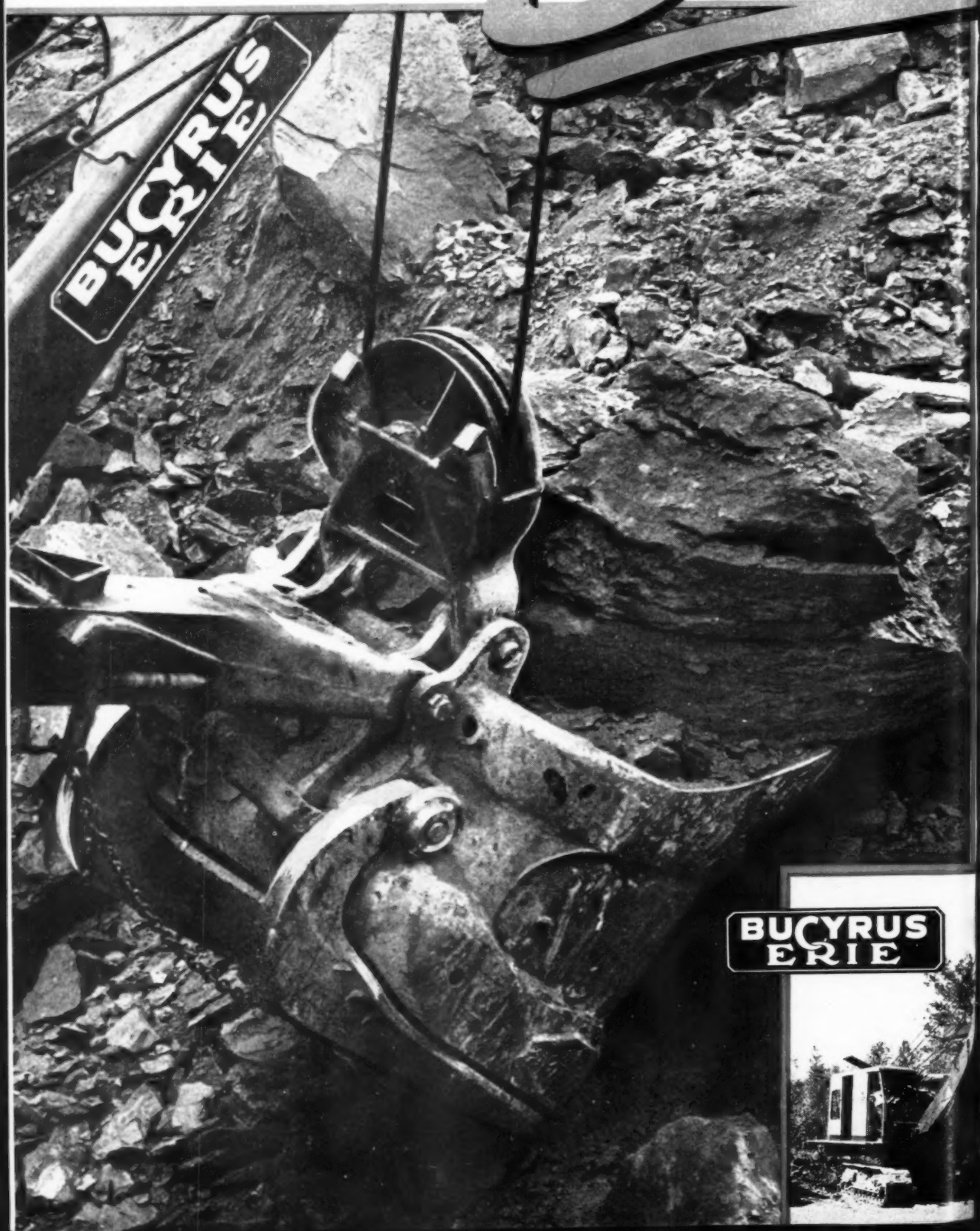


INTO SHOVEL WORK

BUCYRUS-ERIE dippers bite forcefully into e bank, load fully and quickly, and stand up nder the toughest digging to produce big out- uts over long hours of shovel operation.

A combination of casting and welding puts rength where it's needed, yet cuts down useless eadweight to add increased efficiency, while e modern streamlined design means fast fill- g and quick dumping. The renewable lip is n alloy steel casting, and the protruding lip elf cuts a clearance for the alloy steel plate des, thus reducing wear. The reinforced door curved to eliminate waste space at the rear f the dipper and swings well back to permit clean dumping. Reversible, forged tool steel teeth furnish superior cutting ability, and can easily be removed for resharpening by forging or welding.

For a strong, capable dipper that can be depended upon for a heaping load at every pass, and for effective shovel operation that maintains peak production, you will want to learn more about Bucyrus-Eries. Let your distributor give you further details about Bucyrus-Erie ⅜- to 2½-cu. yd. excavators. They're well worth investigating.

BUCYRUS-ERIE COMPANY

SOUTH MILWAUKEE, WISCONSIN

94E4

Notes from the manufacturers

R. G. LeTourneau, Incorporated, Peoria, Illinois, has announced the appointment of L. A. Welch to the position of Executive Vice-President. Mr. Welch will augment the present direction of other principal LeTourneau officers, Merle Yontz, Vice-President and Treasurer, and Roy McClusky, Vice-President and General Sales Manager, and will assist in coordinating the functions of the division managers at LeTourneau factories in Longview, Texas, Toccoa, Georgia, and Vicksburg, Mississippi.

Davey Compressor Company, Kent, Ohio, announces the appointment of eight new dealers and distributors. New full line distributors of Davey portable and stationary compressors, lighting equipment, and truck power take-offs are: National Equipment Company, Louisville, Kentucky; M & F Equipment Company, Albuquerque, New Mexico; C. H. Jones Equipment Company, Salt Lake City, Utah; J. W. Grass Equipment Company, Atlanta, Georgia.

Named as industrial compressor dealers are Summit Hardware Company, Akron, Ohio, and Portable Service Equipment Company, North Philadelphia, Pennsylvania.

Warner & Derickson, Incorporated, Toledo, Ohio, has been appointed to handle Auto-Air (truck-mounted) compressors, Track-Air (tractor-mounted) units and Davey Heavy Duty Truck Power Take-offs.

William S. Bolden Company, Charleston, West Virginia, will sell and service Davey Air Chief portable and industrial compressors.

Gardner-Denver Company, Quincy, Illinois, has opened new branch offices in New Orleans, Cleveland, and Kansas City. M. B. Morrisette is in charge of the New Orleans office. The Cleveland office has R. A. Williams as Manager. E. C. Wallace will be Branch Manager in Kansas City.

These new branch offices will sell and service the Gardner-Denver line of rock drills, pumps, compressors, mine car loaders, hoists, and drilling engines.

Goodyear Tire & Rubber Company, Akron, Ohio, announces the appointment of Claude E. Davis as field engineer in the Midwest. Mr. Davis will supplement the work of company engineers in Akron, aiding mechanical goods field representatives in obtaining technical on-the-job data, and supervising the installation of conveyor belts in mines and other operations. His headquarters will be in St. Louis.

H. O. Penn Machinery Company, Incorporated, Mineola, Long Island, New York, has appointed Orrin MacMurray sales representative for Nassau and Suffolk counties.

Euclid Road Machinery Company, Cleveland 17, Ohio, has appointed The State Tractor & Equipment Company, Phoenix, Arizona, as its distributor for the entire state of Arizona with the exception of Navajo, Apache, and Mohave counties. Officials of the company are: Roy Robinson, President; J. H. Tiller, Sales Manager; and W. H. Bridges, Office Manager.

Milwaukee Hydraulics Corporation, Milwaukee, Wisconsin, announces the appointment of W. G. Beriowell as Assistant Sales Manager.

Mack Trucks, Incorporated, New York City, New York, has appointed John G. Caley, Manager of the National Accounts Department for the company's Southern Division.

In his new position Mr. Caley will work with the six factory branches and 200 dealers of Mack in the Southern Division. His headquarters will be in Atlanta.

Murphy Diesel Company, Milwaukee, Wisconsin, announces the following appointments: F. R. Meyers to be District Sales Manager for the state of Missouri, eastern Kansas, and southwestern Illinois; Alexander M. McDougall to be district sales manager for the New England states.

Hercules Powder Company, Wilmington, Delaware, has appointed C. W. Ballard Manager of the concern's Explosives Department district office in Pittsburgh. Mr. Ballard succeeds John M. Martin, who has been made Assistant General Manager of the company's Cellulose Products Department in Wilmington.

Buda Company, Harvey, Illinois, announces the appointment of Harry G. Campbell to the position of Sales Manager of the firm's DieseLight Division. This Division handles sales and manufacture of diesel electric and gasoline electric generator sets.

Rucker Vaughn Company, Oakland, California, announces a change of name and corporate ownership. The firm will operate henceforth as The

SLEDGE HAMMERS

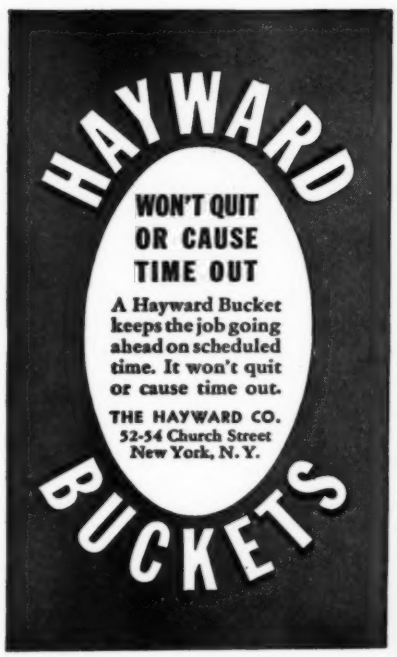
Forged pre-war steel. Genuine hickory handles attached. Lots of 2, 5 and 10 dozen assortments.
10-lb., $1.10 ea. 14-lb., $1.54 ea.
12-lb., 1.32 ea. 16-lb., 1.76 ea.
(Slightly Used—Excellent Condition)

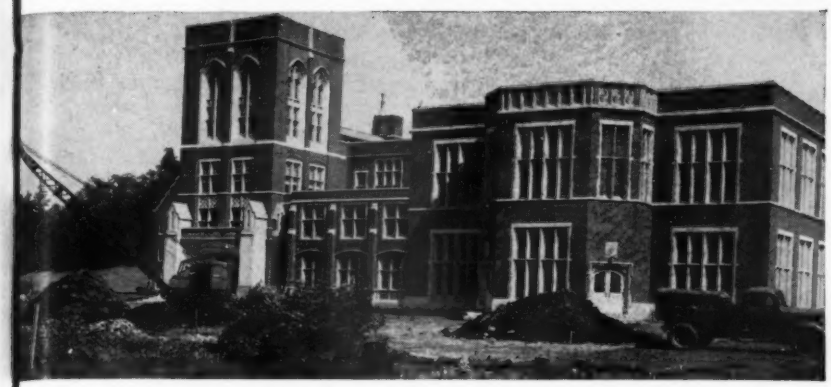
WEDGES

Drop forged from high grade carbon steel. Heat treated and hardened. 200 pound box assortment, $10.00
(Slightly Used—Excellent Condition)

WHEELBARROW WHEELS—Cast aluminum hub. Equipped with ball bearings and 4-ply rubber tire and tube.
Complete $13.95

UNITED SUPPLY CO.
420 W. Juneau Ave., Milwaukee 3, Wis.


HAYWARD
WON'T QUIT OR CAUSE TIME OUT
A Hayward Bucket keeps the job going ahead on scheduled time. It won't quit or cause time out.
THE HAYWARD CO.
52-54 Church Street
New York, N.Y.
BUCKETS



• **Peckham Roads Corp. (White Plains, N. Y.) is engaged in a re-grading and road building project at Scarsdale's 1200-pupil high school. The dragline is a ¾-yd. Bucyrus-Erie 22-B and the Ford-mounted compressor an Ingersoll Rand.**

Rucker Company, with Clark E. Rucker as sole owner.

With the change of name, the company is also expanding its operations into the sales and distribution of hydraulic as well as pneumatic equipment. Among the lines now handled are cylinders and valves, compressors, regulators, lubricators, filters, hoists, electric motors, and drives.

Colorado Fuel and Iron Corporation, New York City, New York, has announced the appointment of L. J. Renner to the position of District Sales Manager for the company's Wickwire Spencer Steel Division. Mr. Renner will be in charge of the Chicago territory and will have his office in that city.

Timken Roller Bearing Company, Canton 6, Ohio, has appointed H. M. Shank Detroit Branch Manager to succeed J. D. Jesseph. Mr. Shank was formerly Boston Branch Manager of the firm's Service-Sales Division. His place in Boston will be taken by Frank M. Barry, a field representative in the New York office.

Independent Pneumatic Tool Company, Chicago 6, Illinois, has appointed B. H. Johns Manager of the firm's Mining and Contractors Tool Sales Division. Mr. Johns, who has been manager of the company's St. Louis branch for the past seven years, will make his headquarters in Chicago. His position in St. Louis will be taken by W. B. Smith.

B. F. Goodrich Company, Akron, Ohio, has appointed Carmen F. Newland Manager of the Kansas City District of its Industrial Products Sales Division.

General Tire & Rubber Company, Akron, Ohio, has promoted Dwaine Edsall to Production Manager of its Akron plant.

New Holland Manufacturing Company, Mountville, Pennsylvania, has appointed Franklin M. McCorkel to the position of district manager. He will handle the territory of Ohio, Kentucky, Michigan (with the exception of the upper peninsula), West Virginia, and Tennessee east of the Tennessee river.

Mr. McCorkel's office will be located in Columbus, Ohio.

John A. Roebling's Sons Company, Trenton, New Jersey, announces the appointment of H. S. Christie as manager of the Atlanta, Georgia, branch office. He replaces C. G. Mullings, recently retired after 45 years of service in the Atlanta territory.

Nordberg Manufacturing Company, Milwaukee 7, Wisconsin, announces the promotions of four Divisional Managers to Vice-Presidencies. Division Managers appointed company Vice-Presidents are Roland W. Bayerlein, Heavy Machinery; H. H. Talboys, Railway Equipment; D. A. Cheyette, Crusher; and R. R. Shafter, Process Machinery.

Hamilton Rubber Manufacturing Corporation, Trenton 3, New Jersey, announces the opening of a branch office and warehouse in Houston, Texas. Under the direction of W. A. Olivier, the new branch will handle a complete line of the firm's products including transmission, conveyor and elevator belting, all types of industrial hose, packings, and molded products.

Haul SMALL OR MEDIUM EQUIPMENT with your DUMP TRUCK

on the ROGERS "TAGALONG" FRONT LOADER

AVAILABLE IN 10 TO 20 TON CAPACITIES

With the new Rogers "Tagalong" trailer a dumptruck serves as the tractor to haul light and medium equipment, and one driver handles both jobs.

Your overhead is kept to a minimum. Hauling charges and costly delays are eliminated with the "Tagalong".

Write for prices and additional information on this versatile trailer which will save its purchase price in a remarkably short time. PATENTS PENDING.

EXPERIENCE builds 'em • PERFORMANCE sells 'em

ROGERS HEAVY DUTY Gooseneck Trailers

ROGERS BROTHERS CORPORATION

DESIGNERS and BUILDERS of HEAVY DUTY TRAILERS SINCE 1915

136 ORCHARD ST. ALBION, PENNA.

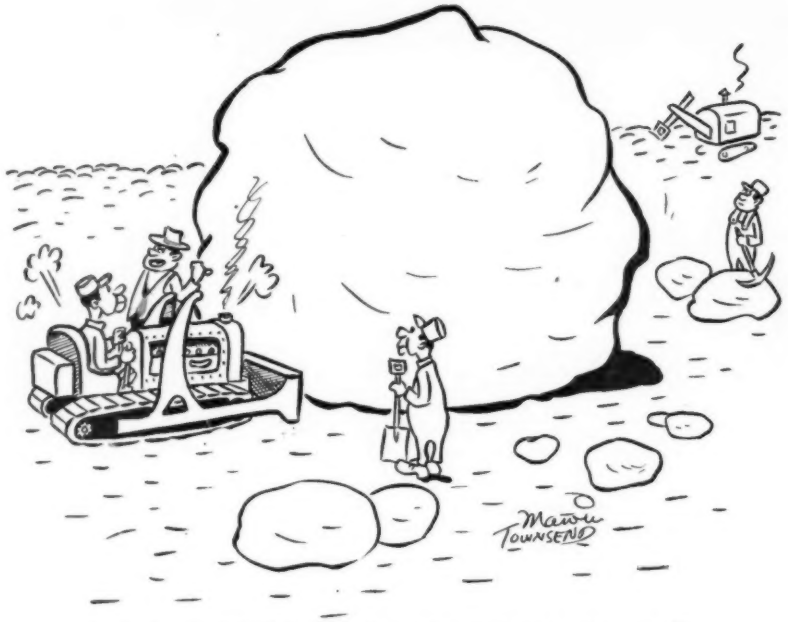
Quarrying Limestone

(Continued from page 687)

75-ft. limestone seam. Plans call for eventual mining of an additional 25 ft. out of the ceiling, leaving 20 ft. of stone as permanent ceiling, in addition to 5 ft. of soapstone and 30 ft. of overburden.

Rooms at Tyrone are also 50-ft. square, but their height in the first advance is only 24 ft. as compared to the 30-ft. height at Russellville. The Tyrone rooms will eventually be mined out to 41-ft. height. Somewhat smaller rooms are being employed at High Bridge, the lateral dimensions being 45 ft. by 45 ft. Height, however, runs to nearly 30 ft. and pillars are 50-ft. square.

Ventilation has not yet become a serious problem at any of these workings. The fact that the operations were taken underground fairly recently means that none of the headings are as yet sufficiently far from the entrances to necessitate resorting to forced ventilation.



"I don't care WHAT the advertisements say, that's too big a load!"

The primary crushers in use at the four workings visited are of various makes. Both Russellville and Irvington have Allis-Chalmers McCully crushers; the former is a 20-in. and the latter a 14-in. At Tyrone the primary crusher is an Austin No. 8 gyratory, while that at High Bridge is a 28 x 36 Traylor jaw type.

Reduction crushers include two Symons Cone Crushers at Russellville; two Telsmith gyrospheres at Tyrone; a Traylor 410 gyratory and 3-ft. Telsmith at High Bridge and two Telsmith crushers at Irvington. Screens in use at Russellville are two 4 x 12 triple deck Simplicity screens (scalping type), one 4 x 12 single deck Simplicity and a Telsmith 5 x 10 triple deck pulsator. Three Simplicity screens are in use at Tyrone, while the quarry at High Bridge uses a 4 x 12 Robbins and a 4 x 14 Niagara screen. A Telsmith 4 x 10 double deck and a 48 x 102 Robbins gyrate double deck screen are used at Irvington.

Car Loading Procedure

When the workings were observed, loading from stockpiles to railroad cars was generally being handled by shovels and trucks. At Russellville a Bucyrus-Erie single motor electric ¾-yd. shovel was loading to trucks which in turn dumped to cars from a ramp erected beside the L & N siding.

At Tyrone the same procedure

DREDGES

HYDRAULIC
DIPPER
CLAMSHELL

Bolted sectional steel hulls for landlocked, inland waters

If you need a dredge, write us!

AMERICAN STEEL DREDGE CO. INC.
FORT WAYNE 1 · INDIANA · U.S.A.

DESIGNERS AND BUILDERS OF DREDGING EQUIPMENT SINCE 1905

Heavy-duty trailers from 5 to 100 tons

Safe for the biggest loads

Hauling contractors everywhere depend on Jahn Heavy-Duty Trailers for safe, fast and economical moving of their heaviest loads like this 110,000-lb. transformer. Deep, wide flange main beams run the full length of the trailer. Cross-members and outriggers are I-Beam sections. Improved, fabricated gooseneck adds greater built-in strength. Positive, self-equalized braking at each wheel regardless of position of axle assures maximum safety. See your nearest Jahn dealer for details.

C. R. JAHN COMPANY
Dept. 1349
1106 W. 35th ST. CHICAGO 9, ILL.

JAHN TRAILERS
ALL OVER THE WORLD

Reg. Trade-Mark

was being followed with a Koehring ¾-yd. shovel. The plan was, however, to equip this unit with a crane boom and clamshell to eliminate the double loading. A Bucyrus-Erie Dozer-Shovel, mounted on an International TD-9 tractor, assisted the shovel with stockpile work. A ½-yd. Bucyrus-Erie diesel shovel handled stock pile work at High Bridge and at Irvington the assignment went to a Bucyrus-Erie ¾-yd. diesel shovel.

The stone taken from all of the quarries is classified as a high-calcium lime. Analysis of the Russellville product shows 97.8 percent calcium carbonate content. This is the highest calcium percentage for all the quarries visited, the stone produced in the other quarries running between 80 and 90 per cent calcium.

Highway and Agriculture Use

Most of the Russellville product goes for highway use as does that produced at Tyrone and Irvington. The second major market is the railroad market, which takes a high percentage of the High Bridge product as well as smaller percentages of the stone produced at the other three workings visited. The agstone market is an important one also, especially to the Irvington quarry where it ranks next to highways as a user of the product.

The four quarries employ from 22 to 27 men each, when in full production. Twenty-two are employed at High Bridge, 25 each at Russellville and Irvington, and 27 at Tyrone. The working day varies from seven hours at Russellville and eight hours at Irvington to 10 hours at Tyrone and High Bridge. All workings have their own maintenance crews, working the same shifts.

Besides the unique skip-car elevator system already mentioned as an outstanding feature of the Tyrone mine, other interesting points about the quarries include the unusually smooth floors and ceilings in the rooms at Russellville and High Bridge. The latter is reported to have the finest tunnels of any quarry in the district. Unusually good fragmentation and easy penetration of the stone are other features which distinguish the Russellville operation.

Output

Annual output of stone by the four quarries is roughly 700,000 tons, with more than a third—250,000 tons—produced at Russellville. Each of the other three produce approximately 150,000 tons a year.

The Kentucky Stone Company maintains its home offices at Louisville. R. A. Mathews is the company president and Wiley B. Bryan is Chairman of the Board. Vice-presidents include V. C. Morgan, Thomas B. Bullet, and Lister Gaines, the latter in charge of production. W. T. Brooks is Secretary. Western Division Superintendent is Ed. Williams, while John Williams is Eastern Division Superintendent.

Ray A. Vencill is Superintendent at Russellville. R. I. McDonald supervises both the Tyrone and High Bridge workings; his assistants are Charles Bryant at Tyrone and Ed Sallee at High Bridge. At Irvington, W. C. MacMahan is Superintendent.

Davis Dam

(Continued from page 692)

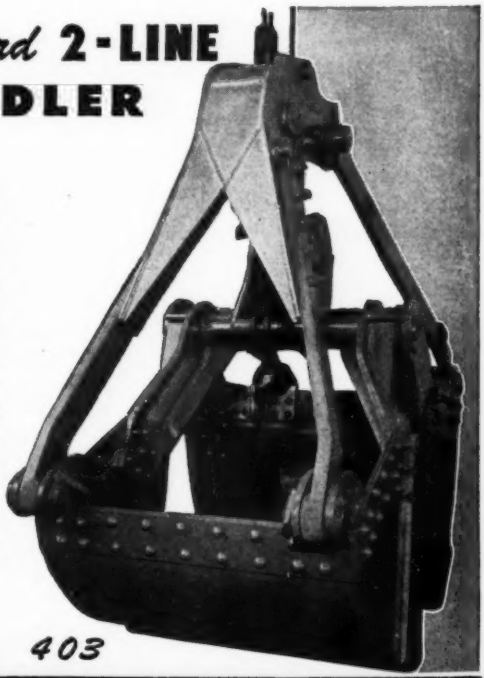
average of approximately 10,500 cu. yds. of earth and rock were excavated each day. Working around the clock, the contractor has had peak days during which as many as 25,000 cu. yds. have been excavated.

Drilling and Shooting

About 80% of the excavation areas were shot. Four HX-71 and 15 FM-2 Ingersoll-Rand, and two WP-180 Worthington wagon drills put down 2¾-in. hole an average 12-ft. by 12-ft. pattern to 20 ft. deep. Holes are sprung with 40 per cent Hercules stick and blasted with 20% Hercules bag powder, employing about 0.6 lbs. of powder per cu. yd. of rock.

Excavation in forebay channel, spillway, powerplant and intake structure areas is handled with four 2½-yd. shovels—one Bucyrus-Erie 54-B and three Northwest 80-D's — and one 3½-yd. Lima 1201 shovel. All units have been used at one time or another

ERIE *Standard* 2-LINE REHANDLER



THIS compact Lever Arm Rehandler Bucket of normal proportions has ample closing power to fill to capacity in compact materials, and is so designed that the reeving can be adjusted to obtain maximum speed with capacity grabs in loose materials. We have reduced the "height open dimension" thus requiring minimum headroom, enabling you to pile higher and to discharge into higher hoppers. Lighter weight alloy construction provides more pay load (scoop contents) less bucket dead weight. To see this bucket in all detail write for bulletin 403.

● *Write for Booklet 403*

ERIE BUCKETS • *A Complete Line*

Erie Steel Construction Co., 4711 Geist Rd., Erie, Pa.

BUCKETS • AGGREMETERS • PORTABLE CONCRETE PLANTS

on the job with dragline front ends. As shovels, they average 4000 cu. yds. each per 24-hr. run at peak production.

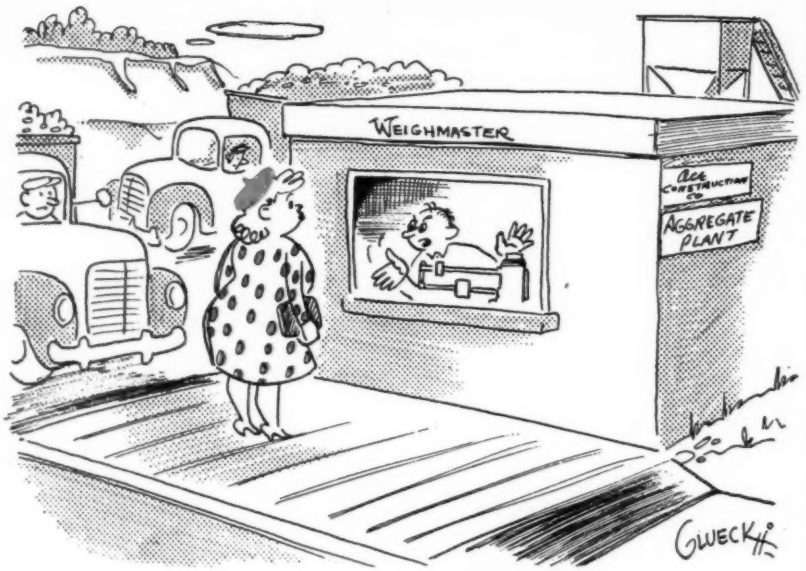
Twenty-four end-dump 10-yd. and 16 bottom-dump 13-yd. Euclid trucks haul excavated rock from the shovels an average distance of 2800 ft. Hauling roads, built of native material, are kept in excellent condition by two 412-H Adams and one Caterpillar 12 patrol graders.

Scrapers and Tractors

For excavation of common material in the diversion channel and general utility work, the contractor uses seven 28-yd. Woolridge scrapers, four 16-yd. Tournapulls, and 13 Caterpillar D-8 and D-7 tractors—eight with LeTourneau bulldozers. Peak production of the former scrapers was 1500 cu. yds. per 8-hr. shift, and 900 cu. yds. for the Tournapulls. All lubricants were supplied by the General Petroleum Corporation.

The concrete—expected to total more than ½-million yds.—is mixed in a central mixing plant, and is then moved from the mixing plant in buckets to the area where it is being placed in the structures. Whirly cranes, operating on rails, lift the buckets from the cars and transfer them to the point of placement.

Lumber from mills leased by the contractor near Flagstaff, Arizona, was stockpiled during last winter, and allowed to cure at the damsite. Aggregate from a borrow pit some three miles below the axis of the dam on the Nevada side of the river will be used in making the concrete.



"The drivers don't ask me for THEIR fortunes!"

Peak Was 1200 Men

September, 1946, when approximately 1200 men were employed by the main contractor, marked the peak month of employment on the project to date. Since that time, the working force has been reduced, and the main contractor is now continuing this reduction during the transition from one phase of construction to another.

In addition to the work just described, much other work has been accomplished, not the least of which was the huge task of building the two construction camps—one, the government camp on the Arizona side of the river a few miles downstream from the dam, and the other, the contractor's camp across the river in Nevada.

The contractor's camp, which will house all the contractor's employees during the construction period, includes ten large Army barracks for single men. Seven smaller barracks have been converted into apartment buildings for married men, and in addition, there are 50 single-family dwellings and 50 war surplus house trailers now in use. In all, there are facilities for housing a population of approximately 3000 persons.

Complete Community Facilities

A school for all grade children was opened at the beginning of the fall term, 1947. A mess hall, commissary, church, theater, recreation center with swimming pool, filling station, store buildings, a fire house, hospital, and all facilities necessary for the health, welfare, and safety of a small

INCREASED PROFITS WITH DRILLS THAT NEEDN'T EVER BE IDLE

Ideal for operators whose blast hole work is of a part-time nature are the modern Bucyrus-Erie 21-W and 22-W churn drills. Capable of drilling 4" to 10" holes with the same snappy speed as the larger Bucyrus-Erie blast hole drills . . . these machines, with their big spooling capacity for deeper holes, can bring extra profits through contract, rental, or water well drilling when they aren't needed on your job.

32W47

BUCYRUS-ERIE

SOUTH MILWAUKEE, WISCONSIN

town, have been placed in the camp.

Two complete water systems, one for the industrial area and one for the domestic area, are supplied by 200,000-gal. redwood-stove tanks located so that a minimum pressure of 65 psi. is available for fire protection. Water is pumped to the tanks from the river and chlorinated—domestic water is softened to 100 ppm. hardness by a zeolite softening plant with ½ mgd. capacity.

The contractor has also installed a central sewerage system and an Imhoff tank. In addition to chlorination, the effluent is kept in a 10-acre pond for 30 days before being returned to the river.

A part of the government camp will be permanently maintained for the maintenance and operation personnel after the dam is completed and placed in operation. In all, forty permanent houses wil be located in the government camp, which is provided with sewers, paved streets, curbs, gutters, sidewalks, culverts, drains, and other utilities.

Already completed construction includes four trestle bridges across the river, (one used exclusively as a haul bridge), another across the diversion channel, warehouses, shops, a central air-compressing plant, lighting for night work, a large rock separator, a concrete mixing plant, and many other features.

Other phases of the construction program of the $77,000,000 project have been carried on according to schedule. Contracts calling for the expenditure of millions of dollars have been made for the manufacture of equipment for the 225,000-kilowatt powerplant, the spillway, intake structure, and other appurtenant works. This equipment is being delivered as needed.

The $147,790 contract for a 125-ton crane was recently awarded the Judson Pacific-Murphy Corp. of Emeryville, California. The contractor has been allowed 450 days to make the delivery of the huge gantry crane. Mounted on rails atop the intake structure of the powerplant, the crane will be used to erect and install 17½-by 32⅔-ft. fixed-wheel gates in the five floodgates of the intake mechanism. It will also be used for maintenance work after the dam is completed.

Five 45,000-kilowatt outdoor type generators will be installed in the powerplant. These will add from three-quarters to a billion kva. annually to the five billion kva. now being generated at Hoover and Parker Dams.

Project Personnel

Project personnel include H. F. Bahmeier, Construction Engineer, H. R. Orr, Office Engineer, and Jean Walton, Field Engineer for the Bureau of Reclamation; H. E. Williams, Project Manager, T. L. Terry, Project Superintendent, and E. G. Johnson, Office Engineer for the Utah Construction Company.

The dam is in Region III of the Bureau of Reclamation, which is supervised by E. A. Moritz, Regional Director; L. R. Douglass, Assistant Regional Director; C. A. Bissell, Regional Engineer, Branch of Design and Construction; and R. V. Sprague, Regional Power Manager.

Even with the construction of the three great dams and the three smaller ones, additional work must be done on the giant Colorado River to carry out permanent river control measures at Needles, California, and at certain other towns, some of them more than a hundred miles below Hoover Dam. Including a $77,000 hold-over from a previous appropriation, some $677,000 is being spent to control this great river, in addition to the moneys being spent in constructing Davis Dam.

A million-dollar 20-in. floating cutter-type dredge will be used to cut a new river channel through swampland between the cities of Needles and Topock, twelve miles south. Also a similar cut will be made in the Cibola Valley, fifty miles north of the Mexican Border.

In the fall of 1944, the Bureau

(Continued on next page)

Front - End
LOADERS
For Industrial Tractors
Extensible Booms,
⅝-cu. yd., Bucket 8-foot lift,
Backfiller Blades
White Mfg. Co.
ELKHART INDIANA

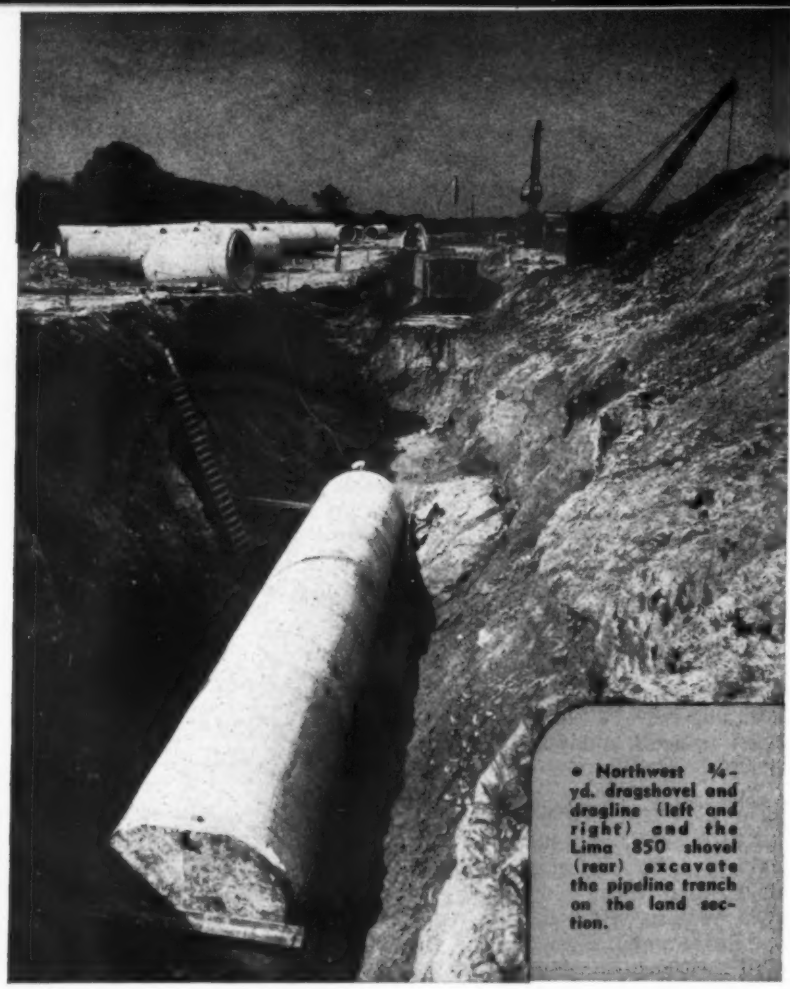
On most jobs When Excavating is Necessary

You'll most likely come face to face with one or more Owen buckets, should your travels take you to an excavating job.

The reason why is most simple, for consistent superior bucket performance by Owens is responsible for their widespread use and acceptance.

Bring your equipment catalog files up to date NOW by requesting your copy of the latest Owen Catalog.

The OWEN BUCKET Co.
6095 Breakwater Avenue Cleveland, Ohio
Branches: New York Philadelphia Chicago Berkeley, Cal.



• Northwest ¾-yd. dragshovel and dragline (left and right) and the Lima 850 shovel (rear) excavate the pipeline trench on the land section.

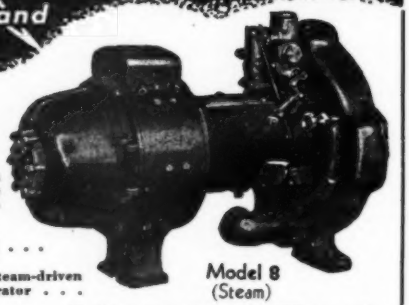
Water Intake

(Continued from page 695)

ft. instead of 12-ft. lengths. It gives the Eastman Kodak Park's considerably enlarged lakeside water supply and treating plant pumps and reservoirs a capacity nearly twice as large as Rochester's daily domestic use of water. Kodak Park is Eastman's central photographic film plant and it uses vast quantities of filtered water.

HERE'S your ideal small power plant for lights, ventilating fans, or other electrical equipment.

MOON Generators TURBO and BELT DRIVEN for LIGHT and POWER



Model 8 (Steam)

Important MOON features include:

1. GOVERNOR AND COMPOUND WINDING on Steam-driven models prevent excess voltage output which might injure electrical apparatus . . .
2. ONLY 2 EASY-TO-REACH OILING POINTS . . .
3. AUTOMATIC CUT-OFF on larger capacity Steam-driven models prevents overload damage to generator . . .

Send now for illustrated circulars

Models from 1 to 7½ KW capacity.

Moon MANUFACTURING CO.

ESTABLISHED 1893

118 North Jefferson St., Chicago 6, Illinois, U. S. A.

Send in your old Moon generators for rebuilding now — we can give prompt service.

Davis Dam

(Continued from preceding page)

of Reclamation carried out temporary relief measures in the Needles area to protect the city and the Santa Fe Railroad from the river, which had spread out beyond its banks as the result of an enormous silt plug which had formed between Needles and Topock. At that time, a levee was built along the swamp to keep the river out of the lower areas of Needles, and pumps were installed to pump water from inside the protective levee back into the river.

Prior to the construction of Hoover Dam, an average of some 16 million acre-feet of water carried down an average of 150 million tons of silt per year. Now this enormous silt load is deposited in Lake Mead, behind Hoover Dam—the northernmost dam on the river—and clear water is discharged below the dam.

Change in River Slope

Consequently, the river bed, which for thousands of years had assumed the gradient necessary to transport silt-laden water, is now attempting to adjust its slope to the lesser gradient required for the flow of clear water. As a result, the river has deepened its bed at certain points, and at others has built up its bed by the deposition of silt.

The silt deposit between Needles and Topock is an example. There the stream bed has been raised several feet, causing the stream to spread out over a wide area. A dense jungle of tules, willows, and other vegetation has grown up in this area, adding greatly to the difficulties of controlling the river, and resulting in a loss of water through evaporation and transpiration.

More than a year ago, the Bureau of Reclamation obtained surplus amphibious tanks from the Navy and Marine Corps for use by survey crews in penetrating the dense vegetation on the silt deposits. Survey crews are in constant touch with each other by means of two-way radio sets. This new undertaking is expected to eliminate the danger of flood control in the area of Needles and at other points on the river.

NOT in the Contract

"Gas Overcomes Girl While Taking Bath," reads a headline in a Bowling Green, Ky., paper. Then followed the account of the near-tragedy:

"Miss Blank owes her life to the watchfulness of the elevator boy and janitor."

Q. What can a bird do that 7 out of 10 people can't do?

A. Make a small deposit on a new car.

"The lady says you tried to speak to her at the station," said the judge. "It was a mistake," said the shovel runner. "I was looking for my friend's sister, whom I had never seen before, but who's been described to me as a handsome blonde with classic features, fine complexion, perfect figure, beautifully dressed, and . . ."

At which point the witness announced: "I don't care to prosecute the gentleman. Anyone might have made the same mistake."

"Hello, coach!"

"I thought you were told not to drink while in training."

"What makes you think I've been drinking, coach?"

"I'm not the coach!"

An employee of a contracting firm fell in love with an actress and decided to marry her. For the sake of prudence he employed a detective agency to prepare a character report on her. The operative's report read:

"This lady has an excellent reputation; her past is without a blemish; she has a circle of impeccable friends. The only breath of scandal is that lately she's been going around with an excavating foreman of doubtful reputation."

Foreman: "I understand your grandmother is the old-fashioned type who still toils at the spinning wheel. Does she earn much?"

Shovel Runner: "Well, last night she won fifty dollars on the red."

"Don't waste your breath," the cat skinner interrupted the enthusiastic demonstrator, "I got a carpet-sweeper already."

"Good!" said the salesman, undismayed. "Then I can make you a generous allowance on your sweeper in part payment on this fine new model."

For a moment the skinner seemed tempted. Then slowly he shook his head. "No," he said resolutely. "No, I can't make that kind o' deal. After all, I took her for better or worse."

Reformer: Do you approve of tight skirts?

Shovel Runner: Naw, women oughta leave liquor alone.

A mother, testifying on behalf of her son, swore that he "worked on a farm ever since he was born."

Triumphantly the opposing lawyer leaned over to her and thundered: "You tell this court that your son worked on a farm ever since he was born?"

"I do."

"What did he do the first year?"

"He milked."

New Resident: "How long must a man live here before he can vote?"

Town clerk: "What ticket?"

"My husband says there are some things a girl should not do before twenty."

"Well, personally, I don't care for a large audience, either."

An aggressive red-headed boy landed a job as a messenger, and was promptly dispatched on an errand.

An hour later the telephone rang. A voice inquired, "Have you a red-headed boy working for you?"

"Yes," said the manager.

"Well, this is the janitor at the Oakwood Apartments. Your boy was here a while ago to deliver a message. He insisted on coming in the front way. He was so persistent that I finally had to draw a gun."

"Good heavens!" the manager exclaimed. "You didn't shoot him, did you?"

"No," answered the janitor, "but I want my gun back."

"Our regular shovel used to scare the natives half to death."

TO ADVERTISE: All advertising in this section is payable in advance. Rate: 60c per line, or $7.20 per inch of 12 lines. Minimum charge $2.40. No discounts; no commissions. Please count your copy carefully to avoid delay. Each line contains 41 characters (34 characters if all capital letters are used). Count spaces as punctuation as one character each. Allow 10 characters for box number, if blind advertisement is desired. Be sure to enclose the correct amount of money with your order. Closing date—15 of preceding month. Example: January closes December 15th.

TO INQUIRE: Be sure to address your inquiry to the advertiser by using the correct box number. Mail your letter in care of Excavating Engineer, South Milwaukee, Wisconsin. Write each advertiser a separate letter. Do not write us for name and address of advertiser. This information will not be given out. We have no information about the equipment advertised other than that shown in the advertisements themselves.

Used Bucyrus-Erie 175-B steam shovel 75' boom 48' handle 5 yd. dipper. Need greater working range. Box 3231

Bucyrus-Erie Class 230 (No. 11229) steam dragline. Equipped with 175' boom, 6-yard bucket. Mounted on self-propelled trucks complete with track sections and moderate stock of spare parts. Completely overhauled 1½ years ago, in good operating condition. Located Littleton, Alabama. Price $25,000.
Box 3228

Pomona 26 stage 10 x LC turbine pump, Serial No. PE 4786.
65' of column and shaft.
De-Ion line starter 440-V.
6" check valve.
Float switch, Westinghouse 855883.
Start and stop button switch.
Miscellaneous couplings, strainers, discharge head.
Vertical Westinghouse induction motor 100 HP., 1750 RPM.
3 PH style C-1261084 440-V Serial No. 145.
Equipment at Granby, Colo.—$4,200. F.O.B. Denver, Colorado. (Subject to prior sale.)

Granby Constructors
2401 W. 8th Avenue, Denver, Colo.

30" SUPERIOR McCULLEY
GYRATORY CRUSHER

Just out of service

GRANITE CITY SLAG COMPANY

542 South Dearborn Chicago 5, Illinois **Telephone: Wabash 8093**

Mich. crane T.H. ¾-yd. bucket and dipper. In good condition except main chain drive. $3800. Also rotary sand dryer, capacity 40 ton per hr. Complete with motors. Good condition—$4000. Write or call.

Foundry Truckers
9 E. Webster Muskegon, Mich.
Phone—23432

70-C and 103-C railroad type steam shovels for sale; middle western location. Box 3241

Bucyrus-Erie built trailer, suitable for 19-B or 20-B shovel—good rubber. Located in Philadelphia. Box 3243

One Bucyrus-Erie Model 10-B 3 way combination, crane, shovel, backhoe; good condition throughout and new motor installed recently. Box 3240

New and unused 2 cubic yard Type AX medium duty dragline bucket complete with all fittings. Box 3239

1—19' dipper handle for 37-B—New.
1—1½ yd. dipper for 37-B—New.
1—⅝ yd. dipper for 19-B—good condition.

JAMES D. MORRISSEY, INC.
9119 Frankford Avenue Philadelphia 14, Pa.

Two 1947 TD18 International bulldozers with double drum power control.
Three 1944 TD9 International Bucyrus-Erie shoveldozers.
2-yd. P&H crane, 50-foot boom, fairlead, Caterpillar 17000 motor, mounted on cats, as good as new.
1½-yd. Osgood crane, 70-ft. boom, mounted on 12 12x24 tires, good condition.
Buckets—new—one ¾-yd., one 1-yd. Pettibone-Mulliken, one ¾-yd. Link Belt medium duty dragline.
Complete shovel front for Model 6 Northwest.
Crowd chains for ¾-yd. Koehring, type 1641AA, 144 links to the set.
Miscellaneous parts for shovel buckets, including doors, sides, manganese fronts and lips, for Northwest 2½-yd. 80D, Northwest 2-yd., Lorain 2½-yd., Lorain 1½-yd. and Link Belt 1- and 1¼-yd. buckets.
Caterpillar D7 bulldozer and Caterpillar D7 hydraulic angledozer.
Derrick, A-frame, tractor mounted, for use with Caterpillar D7, non-revolving complete with fairlead assembly, capacity 12,000 lbs. at 5' radius.
Heil winch for Caterpillar D7.
Mixer, rotary tiller, Seaman model MHD-72, heavy duty, two tires, trailer hitch, Waukesha engine, 75" cutting width, with drive from engine through twin disc clutch, front end control, new.
Woolridge scraper, model BBS, carryall, with two 14x20 front tires, four 14x20 rear tires, 8½-cubic yard, slightly used.
Portable coal conveyor, 2 rubber tired wheels, self-propelled, Wisconsin motor.
Centrifugal Allis-Chalmers water pump, type SSDHB, model MBK, iron body, bronze fittings, V-belt drive, 2" suction, 1½" discharge, steel base Wisconsin 1-cylinder air cooled engine, new.
Checker trailer tank, 350-gallon, serial W256.
4" Peerless pump, powered with 4-cylinder Wisconsin motor.
Kerrick Kleaner, slightly used.
50-ton Rogers trailer on solid tires—new tires and new deck.
Wheels and tires for 50-ton Rogers trailer—2 40x14 front, 8 28x12 rear.

R. E. CUNNIFF
393 Brookline Street Newton Center 59, Mass.
LASELL 4300

New
BUCYRUS - ERIE
PARTS!
From U. S. Govenment Surplus

Parts For: 33B, 37B, 54B, and 120B. Gears, Pinions, Bearings, Bushings, Lining, etc.

Immediate Delivery From Available Stock. . . . At a Savings While They Last!

FURNIVAL
Machinery Company
5405 Lancaster Ave., Phila. 31, Pa.
TRinity 7-5200

Lorain 60 on ten wheel Mack truck, 80' main boom and 30' jib fully guaranteed. $13,500.
¾ yd. Blaw-Knox digging bucket with teeth, new lips, excellent condition. $750.
Compressor 2 stage Chicago Pneumatic on steel wheels, new 1942. Excellent cond. $3500.
Located N.Y.C. Box 3237

Five Koehring 7 and 8 yard bottom dump pneumatic tired tractors and trailers; tractors 4 cyl. gasoline; tires 65%. Also 1 Model D-2 B-E shovel, serial 11476, good condition, with Atlas diesel motor and 1-¼ yard Amsco rock bucket.

Milburn Machinery Co. Fort Worth, Texas

Complete backhoe attachment for Bucyrus-Erie 29-B. Excellent condition. Located Kentucky. Box 3196

Surplus Swivel Hook Double Sheave Blocks

2 10 ton "American" 14" swivel hook double sheave block, diamond pattern with cast steel sheave bushed with self lubricating bronze bushings, grooved for ⅝" rope. Groove diameter 12¼" equipped with 100 lb. cheek weights. 2½" swivel hook. Approximate shipping weight 234 lbs. American Hoist & Derrick Co. Dwg. 1-M-6560.

1 10 ton "American" 14" swivel hook double sheave block, diamond pattern with cast steel sheaves bushed with self-lubricating bronze bushings. Grooved for ¾" rope. Groove diameter 10½" equipped with 100 lb. cheek weights. 2½" swivel hook. Approximate shipping weight 235 lbs. American Hoist & Derrick Co. Dwg. 1-M-6560.

1 40 ton "American" 24" swivel hook double sheave block diamond pattern with cast steel sheaves grooved for ⅞" rope. Sheaves to be bushed with plain bronze bushings, with center bored sheave pin and ¼" Alemite hydr grease fitting No. 1980 equipped with 800 lb. cheek weights and 5½" swivel hook. Total weight of block 1190 lbs. Dwg. BEFP 1-M-6560.

BUCYRUS-ERIE COMPANY
South Milwaukee, Wisconsin

8—WINCHES, Bayard, type 3, consisting of:
1—20" dia. x 18¼" drum, with spooling device
2—15" gypsy heads
Drum duty at low speed: 15,000 lb. pull at 78 FPM
Drum duty at high speed: 3360 lb. pull at 348 FPM
Drum stowage: 900 ft. of ¾" wire rope
Gypsy duty (each): 3060 lb. pull at 213 FPM
Mfd. by Parkersburg Rig & Reel Co. Direct coupled through worm gear reducer, 2 speed transmission, to Chrysler type T-118 gas engine, 28.35 HP, 1200 RPM. Overall dimensions of unit 102" x 99". Net weight: 8,135 lbs.

7—WINCHES, Bayard type 4, consisting of:
1—20" dia. x 18¼" drum, with spooling device
2—9" dia. x 6" auxiliary drums
Main drum duty: 15,000 lb. pull at 25 FPM
Main drum stowage: 900 ft. of ¾" rope
Aux. drum duty: 2,500 lb. pull at 45 FPM
Aux. drum stowage: 60 ft. of ½" rope each
Mfd. by Parkersburg Rig & Reel Co. Direct coupled through worm gear reducer to Chrysler, Type T-118 gas engine, 28.35 HP, 1200 RPM. Overall dimensions of unit: 100" x 74". Gross weight: 10,320 lbs.

2—HOISTING ENGINES, Mead Morrison Co.:
2 drum, No. A-97, typical ser. Nos. 15713, 15714, complete with G.E. motors, type CO 2007, 51 HP, 230 V. DC, with Dinkey type controllers.

10—WINCHES, single drum, 2 gypsies, capacity 100,000 lb. pull at 10 FPM to 3,000 lb. pull at 400 FPM.
stowage 900 ft. of 1⅝" steel wire rope. Gypsies 12,000 lbs. pull at 125 FPM. Mfd. by Almon A. Johnson, Inc. with 50 HP, 230 V. DC motor.

5—WINCHES, mfd. by American Hoist & Derrick Co. Single drum and nigger head motor mfd. by W'h'se, DC, 45 HP 230 Volts, 170 amps, 600 RPM.

2—ROPE WINDLASSES, Bayard, consisting of 1 rope drum 20" dia. x 25" with spooling device and single gypsy.
Drum duty: 22,500 lb. pull at 10 FPM
Drum stowage: 900 ft. of 1" rope in 6 layers
Gypsy duty: 8,000 lb. pull at 16 FPM
Gypsy duty: 4,000 lb. pull at 29.3 FPM with hand brake, electrical brake and clutch
Mfd. by Parkersburg Rig & Reel Co. direct coupled through worm gear reducer to 15 HP, 115 V. DC, G.E. variable speed, reversible motor, 120 amp, 650 RPM, series wound. Gross weight of unit: 9,800 lbs.

2—WINCHES, Bayard, **brand new**, complete with electric brake and magnetic controllers
Serial Nos. 3667-8, Mfr. year 1944.
Duty: 8,400 lb. pull at 20 FPM, 2-9/16" rope
Drum Data: 16" pitch dia. R.H. and L.H. scoring each 12½ live turns—plus 2½ dead turns—52¼" sq. ft. live rope
Motor: 10 H.P. General Electric—5 KR 140 SYL-frame 405, Volts 440: 3 phase, 60 cycle, 550 RPM
Controller: G.E.—Magnetic-Type CR 5131-B-11 cat. 11K 1867—10 HP, 3 PH. 60 cycle, 440 Volt. Outline drawing available upon request.

3—HOISTS consisting of 2 drums 12" dia. x 5" wide horizontally mounted on a common shaft; geared to Star Electric motor 120 V. DC, 6 HP int., RPM 500/15. Series wd. Semi-enclosed drip-proof, date 1943. Ser. No 2623299. Overall dimensions 22" x 4' x 2' high, with type D22 brake.

HUGO NEU CORPORATION
31 Nassau Street — New York 5, N. Y.
Rector 2-1334

Dredge For Sale

8 cu. ft. placer gold dredge 30' digging depth, approximately 100' stacker. Main power two diesel 445 hp engines—54' x 112' x 10' hull. New, 1940. Box 3229

USED TRAILER — for Bucyrus-Erie 10-B shovel. Good Rubber.

FOR IMMEDIATE DELIVERY — New Bucyrus-Erie 10-B trailer.

H. O. Penn Machinery Co., Inc.
140th St. & East River
New York 54, N. Y.

ALL-STEEL DERRICKS

28—30 ton capacity BRAND NEW Wiley all steel stiffleg derricks, 32' masts, 60' booms, complete; can furnish with gasoline, electric or steam hoists.

ALSO

Air compressors, bins, boilers, cable, conveyors, cranes, crushers, engines, hammers, conc. mixers, light plants, pneumatic tools, pavers, pumps, saw rigs, welders.

EQUIPMENT CORPORATION of AMERICA

CHICAGO 12 — 1170 S. Washtenaw Av.
PHILADELPHIA 2 — 1505A Race St. — Schaff Bldg.
PITTSBURGH 30 — P.O. Box 9330
NEW YORK 7 — 30D Church Street

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8 Brand new 6DT-468 Buda Lanova diesel engines, 6 cyl. 4¼" x 5½", governor set at 1600 rpm (no load). Without power take off clutch or radiator. F.O.B. South Milwaukee, Wis. Box 3225

Modern floating washing plant, capacity 200 yards per hour. Located Northern California on paved road near railroad. Available now. For particulars address owner, William von der Hellen, Box 1026, Medford, Oregon.

TD-40 International tractor with 4½ yd., four wheel, Bucyrus-Erie scraper complete with hoist. Good operating condition.

KENTUCKY CLAY MINING CO.
Mayfield, Kentucky

CONVEYOR EQUIPMENT

Seven flights complete with motors, starters, pulleys, shafts, belting and idlers. Flight "A" 600' 60", price $59,500; Flight "B" 225' 60", price $26,000; Flight "C" 150' 60", price $29,000; Flight "D" 440' 48", price $22,900; Flight "E" 1200' 42", price $53,500; Flight "F" 1000' 36", price $42,700; Flight "G" 1000' 36", price $45,200. Miscellaneous conveyor equipment price $129,224.

MORRISON-KNUDSEN COMPANY, INC.
P. O. Box 450 — Boise, Idaho

New

DERRICKS

(ALL-STEEL, STIFF-LEG)

3 Available!

From U. S. Government Surplus. 30 Ton at 38 ft. radius; 60 ft. Boom with Bull Wheel.

Priced At a Saving!

FURNIVAL MACHINERY COMPANY
5405 Lancaster Ave., Phila. 31, Pa.
TRinity 7-5200

SURPLUS DIPPERS FOR BUCYRUS-ERIE SHOVELS

2—½ cu. yd. Drag Shovel Dipper—17-B.
3—½ cu. yd. Skimmer Scoop Dipper—17-B.
1—1½ cu. yd. Heavy Duty All Cast Dipper 42-B.
1—2 cu. yd. Rock Dipper—75-B.
F.O.B. Works

Write for any further information desired

BUCYRUS-ERIE COMPANY
Parts Department
South Milwaukee — Wisconsin

USED LOW-BED TRAILERS

1—33 ton LACROSSE TRAILER
1—30 ton ROGERS TRAILER
1—AUTOCAR TRACTOR AND FRUEHAUF TRAILER

Hughes Trailers
1029 Brooke Blvd. — Reading, Pa.

Rent or Sale

½ yd. P&H shovel or dragline
¾ yd. Bucyrus shovel or dragline
1 yd. Northwest shovel or dragline
1½ yd. Northwest shovel or dragline
2 yd. Bucyrus dragline 70' boom
3W Monigan Walker 110' boom
5 yd. Page dragline 115' boom
20 yd. Marion 170' boom

A. W. NEVERS — Mt. Pleasant, Iowa

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Step up your own skill with facts & figures of your trade. Audels Mechanics Guides contain Practical Inside Trade Information in handy form. Fully illustrated. Easy to Understand. Highly Endorsed. Check book you want for 7 days' Free Examination. Send no Money. Nothing to pay postman. ☐Carpentry $6 • ☐Auto $4 • ☐ Oil Burners $1 ☐Sheet Metal $1 • ☐Welding $1 • ☐Refrigeration $4 ☐Plumbing $6 • ☐Masonry $6 • ☐Painting $2 • ☐Radio $4 ☐Electricity $4 • ☐Mathematics $2 • ☐Steam Engineers $4 ☐Machinist $4 • ☐Blueprint $2 • ☐Diesel $2 • ☐Drawing $2. If satisfied you pay only $1 a month until price is paid.

AUDEL, Publishers, 49 W. 23 St., New York 10, N. Y.

WANTED: THIRTY-SIX INCH GAUGE BOTTOM DUMP CARS, FIFTEEN, TWENTY OR TWENTY-FIVE YARD CAPACITY. Box 3247

WANTED: Diesel dragline and floating washing plant minimum 125 yds. per hour. Will buy, lease or work on shares. Could use dragline alone. Box 3244

One of the most experienced soil erosion and dam building contractors in South Africa anxious to contact large firm in America with plant to tackle 20 million pound project. Further scope of 100 million. Prepared come over and discuss project provided passage paid and expenses. Please cable immediately. **J. D. Kunhardt, Box 10, Adelaide, Cape Province, South Africa.**

An old established earth moving firm in South Africa anxious to contact any person who could purchase even second hand 200 D8's or TD40's or largest Allis-Chalmers tractors with bulldozers, scrapers, and rooters. Cable controlled or hydraulic. Liberal commission. Would fly over if you secure the plant first. Cable immediately. **Kunhardt, Box 10, Adelaide, Cape Province, South Africa.**

Wanted: Coal stripping excavators for long time job in high priced field, high quality coal, gentle rolling cover, mostly shale and dirt in Southern field. Job calls for stripping and loading into our trucks. Box 3232

Wanted: Haulage contractors on large coal job. Good roads, long haul, together with long term contract. Must have large equipment. Southern field. Box 3233

(Classified continued on page 728)

For Sale

(Continued from page 727)

POSITIONS WANTED

Power shovel and crane operator—Bucyrus-Erie, Bay City, Lorains-Limas. Also trench machines, backhoes, bulldozers, and compressors. A-1 mechanic, age 48, with over 25-years experience. Go anywhere. Now in Baltimore, Md. Box 3242

Can operate any kind of shovel, dragline, crane or clamshell—steam, diesel, gas or electric. Can do own repair work. Experienced in quarry, ore and coal stripping. Prefer quarry or coal stripping. Familiar with grading work. Will go anywhere. Have release. Box 9254

New trade literature

Title: Underpass and Tunnel Manual

Subject: How to provide underground passageways for people, livestock, merchandise, or utility lines is the subject of this 24-page illustrated manual. It shows how the construction of an underpass, conduit, or tunnel can be handled efficiently and economically.

Pictures and data on sizes and shapes of openings are provided, and available metal structures are described. Suggestions are given on floors, drainage, lighting, brackets, and end treatment. Several pages are devoted to aggregate conveyor tunnels.

Where to Get: Armco Drainage & Metal Products, Incorporated, Middletown, Ohio (Free)

Title: "On-the-Site Monolithic Construction" Brochure

Subject: This eight-page brochure portrays the Tournalayer method of building homes. The method's claimed advantages, such as freedom of design, speed of erection, lower cost per square foot, superior construction, and world-wide distribution, are presented to the reader.

Prepared especially for contractors and builders, the booklet gives a complete description of how the Tournalayer operates and produces various combinations of basic, monolithic units in order to provide any size or style home.

Where to Get: Tournalayer Sales Division, R. G. LeTourneau, Incorporated, Longview, Texas. Ask for Folder RT-126 (Free)

Title: "Caterpillar" Booklet

Subject: In this 16-page illustrated booklet, "Earthmoving Calls For "Caterpillar," the Caterpillar Tractor Company shows what its equipment, and auxiliary units, can do in big and small operations.

Diesel track-type and wheel-type tractors with appropriate trailed units, bulldozers and scrapers, diesel motor graders, diesel engines and electric sets are pictured in active job scenes as prime movers or as power sources for other equipment.

The booklet points to proper applications of diesel equipment and power for dam, airport, and housing construction, road building and maintenance, mine stripping, logging operations, railroad work, crushing and gravel plant duties.

Where to Get: Caterpillar Tractor Company, Peoria, Illinois. Ask for Form 10361. (Free)

Title: Construction Industry Bulletin

Subject: A new 48-page construction industry bulletin has just been released by the American Manganese Steel Division of the American Brake Shoe Company.

The bulletin features illustrated case histories which show how various manufacturers have used Amsco manganese steel castings at points of impact or abrasion on their equipment. Other sections show how replacement parts made of manganese steel have added extra service to existing equipment.

A broad and representative list of applications for the toughness and durability of Amsco manganese steel is covered in the bulletin. Dippers; crusher parts; chain; ditchers, tractor, loader, bulldozer, and scarifier parts; asphalt and concrete mixer parts; wire rope sheaves; welding products; dredge pumps; and other miscellaneous parts subjected to punishment and wear are fully described and illustrated.

Where to Get: American Manganese Steel Division, American Brake Shoe Company, Chicago Heights, Illinois. Ask for Bulletin 1143-CI. (Free)

Title: Dump Truck Folder

Subject: This illustrated folder tells the story of the Model TD Rear-Dump Euclid. Features of the 22-ton capacity truck are listed along with a number of pictures of the machine in action. There are also part views and shots of the hydraulic dump hoists.

Where to Get: The Euclid Road Machinery Company, Cleveland 17, Ohio (Free)

Title: Clutch Booklet

Subject: Cleverly illustrated, this 16-page booklet tells the story of the clutches used in Bucyrus-Erie excavators. The features described include full-feel control, low hand lever loads, high torque for propel, ample size, accessibility, and low maintenance costs.

Cartoons are used to highlight the points made in the text.

Where to Get: Bucyrus-Erie Company, Publicity Department, South Milwaukee, Wisconsin. (Free)

Title: Locomotive Diesel Bulletin

Subject: On the eve of its celebration in 1948 of sixty years of building internal combustion engines, the Superior Engine Division of the National Supply Company has issued a special bulletin on the company's locomotive diesels. The line includes engines for both light switching duty and heavy operation.

Photographs of the engines, specification tables and dimensional blueprints are featured in the bulletin. Also a list of standard and special equipment for the various engines is presented.

Where to Get: The National Supply Company, Superior Engine Division, Springfield, Ohio. Ask for Bulletin No. 4707. (Free)

Title: Batching Plant Bulletin

Subject: This illustrated bulletin describes the Blaw-Knox line of portable batching plants and equipment for aggregates and cement. Also explained is a new portable bulk cement plant with combination arrangements of bins.

Where to Get: Blaw-Knox Company, Pittsburgh, Pennsylvania. Ask for Bulletin 2212. (Free)

Title: Electric Plant Catalog

Subject: This new 16-page bulletin covers the complete line of electric plants offered by D. W. Onan and Sons.

Fully illustrated, the book describes electric plant sizes ranging from 350 to 35,000 Watts A. C. in all standard voltages, frequencies and phases.

Where to Get: D. W. Onan & Sons, Incorporated, Minneapolis 5, Minnesota. Ask for Electric Plants Catalog, Form A-138. (Free)

Title: Wrench Catalog

Subject: This 36-page illustrated catalog describes and pictures the Blackhawk line of wrenches. It lists socket, box-type, and open end wrenches and sets, including the new "Nugget" double-duty drive socket wrenches.

Where to Get: Blackhawk Manufacturing Company, Milwaukee 1, Wisconsin. Ask for Catalog No. 247. (Free)